PROJECT MERLIN, BUXTON

LANDSCAPE IMPLEMENTATION AND MANAGEMENT PLAN

Prepared on behalf of:

Nestlé Waters

The Healthy Hydration Company™

V0.2
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Drawings

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V0.1	Alistair McNay	Associate	24/11/10	Jon Mason	Technical Director	25/11/10	JM

1.0 INTRODUCTION

1.1 This report has been prepared in respect of the proposed development at Waterswallows Lane, Buxton on behalf of Nestle Waters Ltd for submission as part of a planning application for a new bottling and warehousing facility.

1.2 The report sets out details of both the on-site and off-site landscape works that would be provided in respect of the scheme. Specific detail is provided in respect of operations associated with the establishment and maintenance of vegetation and details of planting and seeding proposals.

1.3 Off-site works (including tree planting) will be secured through a Section 106 agreement between the applicant, The Bingham Trust (landowners) and High Peak Borough Council. The extent of off-site works can be seen on Drawing 1072-01-01 – Landscape Masterplan.

2.0 DESIGN OBJECTIVES

2.1 The main design objectives behind the proposed landscape scheme (see Drawing 1072-01-01 to 1072-01-04) are as follows:

- To arrive at a solution that mitigates the presence of a large new structure in the landscape, whilst also respecting the openness of the local landscape;
- To retain the existing field pattern as far as possible;
- To maintain dry stone walling as a significant landscape feature, both through retention and repair of existing walls and the introduction of new walls;
- To use subtle low level mounding to emphasise the existing landform and provide screening of the car park;
- To minimise the extent of hard surfacing with permeable paving (gravel) or reinforced grass used wherever possible;
- To enhance the ecological and nature conservation value of the site;
- To mitigate and soften views of the external service yards principally from the north and east of the development by means of tree planting;
- To provide species rich grassland in place of formal grass to help integrate into the surrounding landscape and to reduce maintenance operations while increasing the nature conservation value of the site.

2.2 The following detailed objectives supporting the above have assisted in the preparation of this Management Plan:

Existing Off-Site Agricultural Land

- To retain as high a proportion of grazing land as possible.
- To maintain the existing field pattern.
- To introduce new tree cover appropriate to the locality.

Proposed Tree Planting

- Individual trees on field boundary walls.
- Small copses in field corners and along boundary walls (approximately 300 nr trees will be planted).
- Tree cover has been introduced to provide screening and filtering of the car park and service yard from properties further north.

- Locally appropriate native tree species to provide both a medium and long term tree structure.
- Planting of semi-mature trees to provide early filtering of views.
- Under planting of semi-mature trees with whips to provide understory structure.

Proposed Scrub Planting

- Limited scrub planting located around SUDs detention pond.
- To discourage and guide pedestrian access away from SUDs detention ponds.
- To provide low scrub habitat cover.

Proposed Amenity Grass

- To allow a neat and easily managed strip to fencelines, species rich grassland and pedestrian / vehicle verges.

Proposed Species Rich Grassland

- Proposed seeding to create a species rich grassland, comprising a high number of native species to reinforce local character and to increase the nature conservation value of the site.
- Topsoil strip of proposed areas will both provide topsoil for tree and shrub planting (reducing the need for importation of material) and create lower fertility conditions for wildflowers.
- Species rich damp grassland to be associated with SUDs detention pond.
- Continued use of grazing as an important aspect of site management further assists landscape character.

2.3 The location of proposed planting and existing retained planting is shown on the drawings listed on the contents page.

2.4 See Section 3 for detailed planting schedule.

3.0 PLANT MATERIAL

3.1 All plant material to be as per the following schedules and of local provinance:

TREE PLANTING					
COPSE PLANTING					
Tree Species (as shown)		GIRTH (CM)	AGE	ROOT	HEIGHT
30.0%	Acer pseudoplatanus	18-20	3x transplanted	RB	4.5-5m
15.0%	Acer pseudoplatanus	Sum of Girth 40-50	5x transplanted	RB	5-7m
30.0%	Fagus sylvatica	18-20	3x transplanted	RB	4.5-5m
25.0%	Fraxinus excelsior	18-20	3x transplanted	RB	4.5-5m
BOUNDARY / INDIVIDUAL TREES					
Tree Species		GIRTH (CM)	AGE	ROOT	HEIGHT
50.0%	Acer pseudoplatanus	18-20	3x transplanted	RB	4.5-5m
50.0%	Fraxinus excelsior	18-20	3x transplanted	RB	4.5-5m
SPECIMEN TREE					
Tree Species		GIRTH (CM)	AGE	ROOT	HEIGHT
100%	Fagus sylvatica 'Dawyck'	30-35	5x transplanted	RB	5-6m

SCRUB MIX				
(Density 1/1m2)				
Mix		**Age**	**Root**	**Height (cm)**
25%	Corylus avellana	1+0 or 1/0	BR	50-60
25%	Crataegus monogyna	1+0 or 1/0	BR	50-60
15%	Cornus sanguinea	1+0 or 1/0	BR	50-60
5%	Ilex aquifolium	1+0 or 1/0	C	20-40
20%	Prunus spinosa	1+0 or 1/0	BR	50-60
10%	Viburnum opulus	1+0 or 1/0	BR	50-60

SPECIES RICH GRASSLAND		
Supplier: British Seed House or similar approved.		
Mixture reference: Based on RE5 - Calcareous Submountain Restoration. Note Festuca rubra ssp litoralis substituted with-Festuca. rubra subsp. rubra.		
Mix	**Species**	**Common Name**
2.00%	Achillea millefolium	Yarrow
2.00%	Calluna vulgaris	Heather
2.50%	Campanula rotundifolia	Harebell
1.30%	Galium verum	Lady's Bedstraw
0.60%	Hypochoeris radicata	Cat's Ear
0.60%	Leontodon autumnale	Autumn Hawkbit
2.00%	Lotus corniculatus	Birdsfoot Trefoil
2.50%	Plantago lanceolata	Ribwort Plantain
2.00%	Prunella vulgaris	Selfheal
2.00%	Ranunculus acris	Meadow Buttercup
0.60%	Ranunculus repens	Creeping Buttercup
1.30%	Filipendula ulmaria	Meadow Sweet
0.60%	Succisa pratensis	Devil's Bit Scabious
16.00%	Agrostis capillaris	Common Bent
6.00%	Anthoxanthum odoratum	Sweet Vernal Grass
3.00%	Cynosurus cristatus	Crested Dogstail
6.50%	Deschampsia cespitosa	Tufted Hair-grass
3.00%	Deschampsia flexuosa	Wavy Hair-Grass
21.50%	Festuca ovina	Sheeps Fescue
21.00%	Festuca. rubra subsp. rubra.	Slender Creeping Red Fescue
3.00%	Poa pratensis	Smooth-Stalked Meadow Grass
• Origin (as defined in the National Plant Specification): Native UK.		
• Rate of application: 5 g/m²		

DAMP GRASSLAND		
Supplier: Emorsgate Seeds or similar approved.		
Mixture reference: Based on EM8 – Meadow mixture for wetlands. Note Silaum silaus substituted with Geranium pratense		
Mix	**Species**	**Common Name**
0.50%	Achillea millefolium	Yarrow
2.00%	Centaurea nigra	Common Knapweed
2.00%	Filipendula ulmaria	Meadowsweet
1.00%	Galium verum	Lady's Bedstraw
1.50%	Geranium pratense	Meadow crane's-bill
1.50%	Leucanthemum vulgare	Oxeye Daisy
0.50%	Lotus pedunculatus	Greater Birdsfoot Trefoil
0.20%	Lychnis flos-cuculi - (Silene flos-cuculi)	Ragged Robin
1.00%	Plantago lanceolata	Ribwort Plantain
1.00%	Primula veris	Cowslip
2.00%	Prunella vulgaris	Selfheal
2.50%	Ranunculus acris	Meadow Buttercup
1.30%	Rhinanthus minor	Yellow Rattle
1.00%	Rumex acetosa	Common Sorrel
0.50%	Stachys officinalis - (Betonica officinalis)	Betony
0.50%	Succisa pratensis	Devil's-bit Scabious
1.00%	Vicia cracca	Tufted Vetch
12.00%	Agrostis capillaris	Common Bent
3.00%	Alopecurus pratensis	Meadow Foxtail (w)
2.00%	Anthoxanthum odoratum	Sweet Vernal-grass (w)
1.00%	Briza media	Quaking Grass (w)
36.00%	Cynosurus cristatus	Crested Dogstail
1.00%	Deschampsia cespitosa	Tufted Hair-grass (w)
25.00%	Festuca rubra	Slender-creeping Red-fescue
• Origin (as defined in the National Plant Specification): Native UK.		
• Rate of application: 5 g/m²		

AMENITY GRASSLAND
Supplier: British Seed House or similar approved.
Mixture reference: A18 - Road verge and Embankments
• Origin (as defined in the National Plant Specification): Native UK.
• Rate of application: 20 g/m²

4.0 IMPLEMENTATION MEASURES

4.1 Establishment of the proposed landscape works will accord with the following;

4.2 For all species rich grassland areas topsoil would be reduced leaving a depth of 50mm topsoil above existing subsoil, which would be ripped to a depth of 500mm and stone picked to remove anything exceeding 75mm. Note: No preseeding fertiliser to be spread on species rich grassland areas.

4.3 Topsoil stripped to facilitate the creation of species rich grassland would be spread to achieve minimum topsoil depths as specified below and / or to create the low level mounding to the north of the development, where topsoil would be spread evenly in layers of 200-300mm and lightly consolidated.

4.4 All trees will be planted at the locations indicated on drawings 1072-01-01 to 1072-01-04 in pits of size 1250 x 1250 x 900mm. All pits to be backfilled with 50% site sourced topsoil and 50% PAS 100 compost. All trees to receive controlled release fertilizer: Scotts Sierrablen Flora (15-9-9+3%Mg0) or similar, 3 tablets per tree.

4.5 All trees will be individually supported or staked. Tree to the building frontage will be underground guyed using a proprietary underground guying system such as Platipus Anchors Limited. All other trees will be short-double staked, with 600mm stake above ground and 1.75m below ground, cross-bar, and secured with a Rubberbloc spacer and belt.

4.6 Scrub planting will be planted into min 450 depth topsoil. Plants to be pit planted in single species groups of no more than 3. Planting will be as densities and specification in section 3. All plants to receive controlled release fertilizer: Scotts Sierrablen Flora (15-9-9+3%Mg0) or similar, 1 tablet per plant.

4.7 Amenity grass areas will receive a minimum of 150mm topsoil. Amenity grass areas to receive an application of pre-seeding fertiliser prior to sowing.

4.8 All tree groups within agricultural fields to be protected with Stock proof fencing set back at a distance to prevent grazing of lower branches / leaves by livestock. Single field boundary trees within agricultural fields to be protected witheither stock proof

fencing or tree crates again to prevent damage by livestock. Trees to also be protected with rabbit guards.

4.9 Trees within the development boundary do not require livestock protection, but will require rabbit guards.

4.10 Scrub planting to be protected with stock proof and rabbit fencing to prevent grazing / rabbit damage.

4.11 All planting that fails to thrive in the 5 years after Practical Completion will be replaced during the next available growing season.

4.12 Within tree planting areas, a 600mm diameter area will be maintained weed free around all trees via the use of an appropriate non residual glyphosate based herbicide, or via hand pulling.

4.13 Scrub planting areas will be maintained weed free around all trees/shrubs via the use of an appropriate non residual glyphosate based herbicide, or via hand pulling until canopies close.

4.14 Species-rich grassland will be subject to initial establishment maintenance (in the first year) that accords with the supplier's instructions. From the second year after seeding onwards, the grassland will be cut to height of approximately 50mm in late summer, and again in late autumn / early spring as required. Arisings during the first year and subsequent early spring cuts will be collected and disposed of off-site. Following the first year arisings from Summer / Late Autumn cuts will be left for one week following cutting before being collected to encourage maximum seed dispersal.

4.15 Should pernicious weeds become established within species rich grassland areas, these will be spot treated with herbicide, removed by hand or be mown on a more regular basis, depending on species and extent of infestation.

4.16 Amenity grass areas will be mown on a regular basis during the growing season (approximately fortnightly) to maintain a grass height of between 50-150mm.

4.17 Amenity grass around fences, walls lighting columns etc will be strimmed rather than weedkilled to prevent visible brown /dead grass and exposure of soils.

4.18 It is proposed that the site would be subject to regular inspection visits by the Landscape Architect. The effectiveness of the management/maintenance measures would be reviewed annually at this inspection.

5.0 TIMESCALE

5.1 Construction works are due to commence during 2011

5.2 Building and infrastructure works are due to complete by early 2012.

5.3 Wildflower and grass seeding would be implemented following completion of the building subject to suitable climatic conditions. This would likely be early to mid 2012.

5.4 Tree planting will be split into two phases. Trees located off site may be implemented in the first available planting season (winter of 2011/2012) if these will not be in danger or impacted upon by ancillary / infrastructure works.

5.5 All other trees planting and scrub planting would commence during the first planting season following completion of the building and infrastructure works, which would likely be in winter of 2012/2013.

5.6 Should building and infrastructure works be completed sometime in advance of a recognised planting season then soiling (including tree pits) would be undertaken ready for the next available planting season and all areas seeded.

5.7 Management and maintenance of the landscape scheme would commence following certified practical completion of the landscape works.

6.0 MAINTENANCE / MANAGEMENT SCHEDULES

6.1 Schedules summarising management activities following completion of the works and the implementation of proposed planting are included below.

6.2 Maintenance visits would be carried out every month between April and September and three visits would be undertaken between September and April. The frequency of summer visits would be reduced to every 6 weeks between April and September following Year 1. A litter pick would be incorporated into every visit, as necessary.

6.3 All planting that fails to thrive in the first 5 years after Practical Completion will be replaced during the next available growing season.

6.4 The following Schedules do not constitute a specification or contract document for the works but are indicative of the activities required to achieve the objectives set out previously. Monitoring and review of establishment and growth on site would determine the actual timing and frequency of management activities.

YEAR 1	
TIMING	**MANAGEMENT ACTIVITY**
Mid Summer (or as indicated by supplier's instructions)	• Cut all species rich grassland areas to a height of c.50mm (or as otherwise indicated by supplier's instructions), allow cuttings to lie for 1 week prior to collection and dispose of arisings off-site.
Autumn / Winter	• Identify plant failures and review reason for failure. Remove and replace as necessary.
Each visit	• Check general health of new planting and review need for control of pests, diseases, the application of fertiliser. • Maintain 600mm dia around trees / scrub 100% weed free using a combination of hand pulling/hoeing and an appropriate non-residual herbicide (glyphosate). • Wildflower seeded areas to be kept free of pernicious weeds (docks, thistles etc). • Water trees to field capacity as necessary during dry conditions to ensure continued growth and good health. • Check and firm up all trees and shrubs as necessary. • Check, re-fix and replace tree stakes and ties and fencing / tree crates as necessary. • Remove any litter and dispose of off-site. • Check for vandalism.

YEAR 2-4	
TIMING	**MANAGEMENT ACTIVITY**
Late Summer	• Cut all species rich grassland areas to a height of c.50mm; allow cuttings to lie for 1 week prior to collection and dispose of arisings off-site.
Autumn	• Cut species-rich grassland areas to a height of c.50mm and dispose of arisings off-site, only if required.
Winter	• Identify plant failures and review reason for failure. Remove and replace as necessary.
Each visit	• Check general health of new planting and review need for control of pests, diseases, or the application of fertiliser. • Maintain 600mm dia around trees / scrub 100% weed free using a combination of hand pulling/hoeing and an appropriate non-residual herbicide (glyphosate). • Water trees to field capacity as necessary during dry conditions to ensure continued growth and good health. • Check and firm up all trees and shrubs as necessary. • Check, re-fix and replace tree stakes and ties, fencing and tree crates as necessary. • Remove any litter and dispose of off-site. • Check for vandalism.

YEAR 5 ONWARDS	
Management requirement will be reduced unless due to plant failures new planting has been implanted. In this case maintain as year s 1-5.	
TIMING	**MANAGEMENT ACTIVITY**
Late Summer	• Cut all species rich grassland areas to a height of c.50mm; allow cuttings to lie for 1 week prior to collection and dispose of arisings off-site.
Autumn	• Cut species-rich grassland areas to a height of c.50mm and dispose of arisings off-site, only if required.
Winter	• Management works to trees as identified during the year.
Each visit	• Review need for management works to trees to promote tree health and encourage good growth, including that of the existing woodland copse. • Remove any remaining tree stakes / ties where standard trees sufficiently established. • Remove any litter to and dispose of off-site. • Check for vandalism.

7.0 ONGOING MONITORING AND REVIEW

7.1 It is proposed that a site inspection would be undertaken during the summer of years 1-2 following certification of practical completion (i.e summer 2013 and 2014) to identify management successes / failures and to make changes to this management plan as necessary. It is envisaged that representatives from Nestle Waters Ltd and the Planning Authority would be invited to attend these annual inspections. Any modifications to the management plan would be made in agreement with the Planning Authority.

7.2 It is proposed that a site inspection would then be undertaken during every fifth year (i.e summer 2019 and 2024 etc), to identify management successes / failures and to make changes to this management plan as necessary. It is envisaged that representatives from Nestle Waters Ltd and the Planning Authority would be invited to attend these inspections. Any modifications to the management plan would be made in agreement with the Planning Authority.