Landscape Management Plan

Proposed residential development

Land off Wignals gate, Holbeach, Lincolnshire.

D. Brown Builders Ltd

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1.0 INTRODUCTION

1.1 This report forms part of the submission to satisfy Conditions 13 & 14 of the planning approval H09-0326-18, granted on 21 August 2018. This application relates to the construction of no more than 77 dwellings, vehicular access and the provision of public open/amenity space. Condition 13 of the consent requires the provision of a detailed soft landscaping scheme to complement the development plus details of post planting maintenance. Condition 14 requires details of boundary treatments including hedges. Native hedges and woodland belts will be covered as part of this submission. Fencing and walling will be covered by the project architect.

1.2 This document should therefore be read in conjunction with the detailed planting plan drawing (WG/18/01).

1.3 The landscape strategy summarised in the following section provides a design rationale for the planting and other mitigation measures which will help assimilate the proposals into their setting and the wider landscape. Essentially the planting proposals develop and expand upon the illustrative proposals shown on the estate layout by the project architect, Andrew Wright. The detailed proposals have been prepared to ensure the specified planting improves biodiversity and is beneficial to wildlife.

1.4 This **Landscape Management Plan (LMP)** will outline the management objectives and maintenance operations necessary for each specific planting area. This it is hoped will ensure a successful establishment phase followed by a coordinated and consistently high standard of management beyond that initial period. This in turn will ensure the successful integration of the development into the surrounding landscape satisfying the aims and objectives of the original Landscape Strategy and the more area specific objectives contained herein.

2.0 AIMS & OBJECTIVES OF THE LANDSCAPE STRATEGY

2.1 The chosen philosophy is in accordance with the requirements of both local and national policy and guidance and is therefore appropriate for the site.

Develop a verdant, robust and naturalistic landscape setting for the development which acts as a soft foil for built elements.

Introduce a wide variety of trees and shrubs to enhance visual interest and seasonal variety which, in turn, should safeguard against significant loss through disease or climate change.

Retain, integrate and enhance as much of the existing vegetation and positive landscape features within the scheme as possible to avoid harm.

Where some adverse harm impact is unavoidable compensate for the loss of features of nature conservation value to result in a net gain in biodiversity.

Introduce new structure planting to define the development edge and help assimilate it into its wider context.

All new native planting to be of British provenance and should include less commonly used varieties e.g. Midland hawthorn (Crataegus laevigata) and elm (Ulmus glabra).

Use planting to improve microclimate by creating windbreaks and shade, as well as improving air quality and reducing the perception of noise.

Create habitats such as hedgerows and flower rich meadows which can support populations of beneficial predator species to control common agricultural pests. Habitats which provide a nectar source, shelter and additional prey species all have the potential to increase beneficial predator numbers.

Less intensive management of hedgerows to increase numbers of beneficial predators.

Protect all new planting from browsing animals and pests.

Promote opportunities for wildlife conservation and biodiversity by the provision of a wildlife garden at the show home.

Minimise light pollution (night blight) through a sensitive and efficient lighting design (LED/solar).

Encourage low energy bio diverse water management using sustainable urban drainage (SUDs) techniques and flood risk management.

Promote the use of natural materials and hard landscape details which complement the rural setting and local vernacular traditions.

Promote fitness and well-being through continuing contact with nature and the creation of tranquil spaces.

2.2 We hope to have demonstrated that the approach adopted is both holistic and sustainable in that it will serve to enhance and conserve the existing landscape character and improve nature conservation using locally indigenous species. The planting mixes have been chosen to enhance the variety, composition, age and structural diversity.

2.3 The **landscape management plan** includes a firm commitment (in accordance with the planning consent) that any defective planting is replaced, augmented and/or improved over time as appropriate. It also highlights legal obligations in relation to the protection of ecological features as well as a duty of care to the public. Given the degree of public access there is a duty of care that all landscape components are safe and that all reasonable steps are taken to minimise risk of injury and damage to people and property.

2.4 Overarching all this the LMP provides a mechanism for monitoring and review. The commitment to this document ensures that management practices are monitored and, where necessary, reviewed on an annual basis in accordance with changing site circumstances and the views of key stakeholders.

3.0 DELIVERY

3.1 The directors of D. Brown Builders Ltd will form a Management Company to organize, oversee and finance maintenance and management operations on the estate development. This will

ultimately be taken over by the incoming residents. The appointed landscape contractors will implement the proposed planting scheme and then manage and maintain it in perpetuity. This arrangement will ensure the planting areas are constantly monitored throughout the establishment phase and consequently any issues or problems that might arise can be dealt with in a prompt and appropriate manner.

4.0 LANDSCAPE PLANTING AREAS

4.1 The landscape areas subject to this Landscape Management Plan include the following components:

Hedge 'A' - mixed native hedgerow alongside the IDB easement.

Hedge 'B'- holly hedge along access to IDB easement on eastern boundary.

Hedge 'C' - mixed native hedgerow alongside the IDB easement.

Hedge 'D' – beech hedge to form backdrop to specimen trees & amenity space.

Hedge 'E'- mixed native hedgerow to western boundary.

Planting Area 'A'- Species rich wildflower meadow to eastern boundary (outside approved site boundary).

Planting Area 'B'- amenity grass & specimen tree planting to public open space.

Planting Area 'C'- Hedgerow & woodland wildflower meadow mix to Western boundary, plus specimen trees.

Garden planting including specimen trees and spring bulbs.

Woodland edge mixes A & B to western boundary.

5.0 MANAGEMENT OBJECTIVES & REGIMES

5.1 The following sections provide a description and specific management objectives for each landscape component along with the annual and occasional management regimes required. This section should be cross-referenced with the **Schedule of Management Operations** included in the Appendices.

5.2 Existing/Mature Trees

Description – Not applicable as there are no trees within the site.

Management Objectives

The management objectives for retained trees are to: Maintain the trees in as healthy and attractive condition, to ensure continuity in tree cover and their contribution to the landscape structure, biodiversity, and screening/amenity value of the site; and ensure that trees are healthy and safe, particularly in places close to public rights of way.

Annual Works

i) Visual Inspection: Trees should be regularly visually checked for the presence of any diseased or rotten wood; fungal or other infections/disease; and stability. If any such issues are identified, then the advice of a qualified arboriculturist should be sought immediately.
ii) Annual Arboricultural Assessment: In any event, an Arboricultural Assessment should be undertaken once annually by a qualified arboriculturist inspecting the condition of existing trees including any cause of increased risk to people or property. Furthermore, during the Arboricultural Assessment, the health of the trees shall be monitored and any works required for health and safety or to promote the health and sustainability of existing trees shall be identified, scheduled and actioned at a suitable time of year following application and granting of appropriate consents by the LPA.

5.3 Existing Hedgerows

Description – Not applicable as there are no hedgerows within the site.

Management Objectives

The management objectives for the existing hedgerows are to: To maintain and enhance where appropriate the screening value, augmenting any hedgerow gaps; and to traditionally manage the hedgerow to develop its structure and to develop its wildlife value, particularly for birds and bats. In addition to this avoid snagging users of the public right-of-way network by branches.

Annual Works

i) Annual Cutting of Native Hedgerows: To maintain a natural profile, hand trim or cut the top and sides of native hedges once annually in late November (outside of the bird nesting season once leaves have started to drop), to an approximate height of 3m to form an even and tidy hedge line, retaining individual hedgerow trees. Cut larger stems, and prune any diseased rotten wood back to sound wood. Remove all cut material from site.
ii) Hedgerow Ground Flora: Leave the vegetation beneath the hedge line uncut to allow ground flora to develop. Avoid the use of herbicides and pesticides near native hedgerows.
iii) Annual Arboricultural Assessment: An Arboricultural Assessment should be undertaken once annually by a qualified arboriculturist to inspect the condition of existing vegetation. The health of existing hedgerows shall be monitored and any works required for health and safety or to promote the health and sustainability of existing hedgerows shall be identified, scheduled and actioned at a suitable time of year, refer to Occasional Works section.

Occasional Works

i) Occasional Works to Native Hedgerows: Where identified by the annual Arboricultural Assessment e.g. where native hedgerows have become overgrown or require more extensive work, carry out recommended remedial work, including coppicing or hedge laying (in sections) to thicken and rejuvenate the hedge line. All extensive works shall be carried out by a skilled, qualified and approved Arboricultural Contractor in accordance with BS3998: 2010 'Tree Work - Recommendations'. All arisings that result from such management works shall be removed off site, unless needed to enlarge or renew hibernacula or eco piles.

ii) Timeframes & Specialist Advice: All works should be completed at an appropriate time of year and in accordance with relevant EU and UK wildlife legislation. Where possible this should be outside of the bird nesting season (i.e. between October through to March inclusive). In any event, according to the nature of the works, there may be an additional requirement for monitoring or a watching brief by a qualified ecologist to ensure there are no nesting birds or bats present.

iii) Gapping up native hedges: Where sections of hedgerow become, thin or fail, gap up hedgerows with an appropriate mix of native species to an approximate density of 6 plants/linear metre, planted in a double staggered row during the planting season (November through to mid-March inclusively). Plants should be a minimum size of open ground whips 600-900mm high or 3L container grown stock for evergreen species (such as holly). Gap up areas of less dense growth with additional plants as required to achieve a continuous hedge line taking due allowance for natural growth and regeneration of cut material. All plants should be native (from a source of local provenance where possible), appropriate to the character of the area and should be selected to increase the species diversity of the existing hedgerow and maximise ecological value.

5.4 Proposed Specimen Trees

Description - New tree planting is incorporated to provide landscape structure and amenity value (Planting Areas B, C, D and throughout the estate including private gardens and amenity areas). Such tree planting will define focal points, enclose spaces and provide a soft foil to the built forms.

Management Objectives

The management objectives for new tree planting is to: Ensure the satisfactory establishment and growth of new tree planting typical of the respective species; Promote conditions so that trees are healthy and safe; and Ensure continuity of the design approach and amenity value of tree planting.

Annual Works

i) General tree maintenance during establishment: Check all trees for firmness and stability in the ground. Check and adjust tree ties, replacing if necessary. Top up bark mulch levels where necessary around the base of new trees, using the same or similar product to that previously supplied to maintain an approximate depth of 50mm to reduce competition from weeds and retain soil moisture. Where trees are in grass areas, remove weed growth by hand and retain a circle of bark mulch (approximate radius of 500mm) to aid mowing and prevent damage to the main stem. All trees shall be

fertilised using a suitable and approved liquid feed (N10:P15: K10) at a rate of 60g/m² during early May and again in late September. Prune back any diseased or rotten wood (including the removal of main stems and limbs) back to sound wood as required. Remove all cut material from site.

ii) Watering trees: Water trees during dry periods (being any period without substantial rainfall for 14 days or more), until trees are successfully established. Water at a rate of 25 litres per tree position into watering tubes, if installed. Apply water at a frequency of once per fortnight from April to the end of September (to a maximum of 15 visits). Increase watering frequency during any continuous hot weather lasting more than 7 days. The frequency of these visits will vary according to climatic conditions. Where restrictions are placed on the use of water, sources and costs of obtaining second class water shall be investigated. Any tree failures or excessive die back from drought stress will be made good.

Occasional Works

i) Checking and removal of tree stakes and ties: Review the need for tree stakes and ties annually for up to 6 years. Remove stakes and ties between 4 to 6 years after planting, but be sure trees are firm and stable. Stakes and ties removed shall be cut at ground level, below lowest grass height (to prevent snagging mower blades) or pulled from the ground and the post holes filled with suitable topsoil. If the tree is found to be weak or unstable after the stakes have been removed, then check the base of the tree for signs of rot. If rotten or unlikely to stabilise, remove the tree and replace. If the tree is free from rot or other cause of its instability, then reinstate a tree support, using 100mm diameter chestnut stake and single tie. The stake should be pushed into the ground with a post rammer, to a depth of 600mm and cut to one third the height of the tree. Fix the tree stem with a rubber tie and spacing device attached to at a point no more than 25-35mm below the top of the post, to prevent chaffing against the post in high winds. Remove old posts and ties and arisings and dispose off site.

ii) Long-term tree surgery works: After 10-20 years of maintenance as above (or earlier if required), newly planted trees will reach semi-maturity and may need corrective surgery. Trees should become subject to the annual Arboricultural Assessment and any works recommended shall be carried out in accordance with previous recommendations.

iii) Tree replacement and enhancement of tree cover: Any tree that dies or is necessarily felled, but which is not removed as part of a programme of tree removals, shall be replaced with a tree of appropriate species and stock size. Such replacement shall be with a tree of either the same or similar species as those existing. The option for replacing with a different species is to allow some flexibility avoiding problems encountered with 'Same Species Disease' and to ensure sustainable tree cover in the interests of visual amenity. Possible damage to drainage/services and adjoining building foundations must be considered before choosing a replacement tree species and location. Where alternative species are being considered, then the species should be suitable to the character of the location and adjoining trees. Once annually the site shall be considered for the need for any strategic replacement or enhancement planting, to broaden the age diversity of trees and tree groups, in the interests of the long-term sustainability of strategically important vegetation. Trees should be a minimum stock size of standards (10-12cm girth), and implemented and maintained in

accordance with good horticultural practice. Replacement and enhancement planting is best undertaken during the planting season (November through to March inclusive).

5.5 Proposed Native Hedgerows

Description - New mixed native hedgerows are proposed for the eastern and western boundaries (Hedges A, B, C & E). The beech hedge (D) will screen parked cars and act as a leafy back drop to specimen tree planting. They provide enclosure and screening, diverting and channeling views along the public right-of-way. They will also act as a deterrent to intruders. New hedgerows will consist of a mix of native species providing optimum value to wildlife, providing both shelter and food.

Management Objectives - The management objectives for new hedgerow planting is to: Ensure the satisfactory establishment and growth of new hedgerow planting with specified heights (see below), form and density according to species; Maintain planting in a healthy and attractive condition of value to wildlife.

The following hedge heights are recommended: Hedges A, B, C & E 1.8-2.1m; Hedge E less than 1-1.2.

Annual Works

i) Weeding and general maintenance: Remove all weed growth by hand as necessary to ensure weed free and tidy planting areas. Seven visits are required per growing season. Visits should occur approximately monthly in the growing season, subject to weather conditions from April to October, with an extra visit outside of the growing season in December or January to inspect the condition of the beds. Take great care not to disturb sheet or bark mulch; top up bark mulch levels where necessary for the first 3 years, using the same or similar product to that previously supplied to maintain an approximate depth of 50mm to reduce competition from weeds and retain soil moisture. Note: For planting using a non-biodegradable weed suppressant membrane, reduce visits to 4 times per year in the growing season. Where a biodegradable weed suppressant fabric has been used, this will have disappeared within the establishment phase. Weeding frequency should therefore be varied according to the site and density of vegetation cover and in any event, should be between 4 and 8 i.e. whatever is required to achieve a weed free scheme. All weeds shall be removed from the site.

ii) Cutting / trimming of hedges: Cut native hedgerow is no more than once a year, outside the bird nesting season. Cut larger stems, and prune any diseased rotten wood back to sound wood. Remove all cut material from site.

iii) Watering of hedgerows: Water hedges during dry periods (being any period without substantial rainfall for 14 days or more). Water shrubs to field capacity (minimum 10 litres per m^2) applying water in the morning or early evening to reduce evaporation. Apply at a frequency of up to 2 times per week from April to the end of September (to a maximum of 20 visits in any one calendar year) as required during any continuous hot weather lasting more than 7 days. The frequency of these visits will depend on an assessment of climatic conditions. Where restrictions are placed on the use of water, sources and costs of obtaining second class water shall be investigated. Any transplant/tree failures or excessive die back from drought stress shall be made good.

Occasional Works

Gapping up and replacement of hedgerows: Remove failed plants and replace with a plant of the same species, and appropriate size. Gap up areas of less dense growth with additional plants as required planted in a single row to achieve a continuous hedge alignment, taking due allowance for the natural growth and regeneration of cut material. Include any works necessary to enable planting to be properly carried out i.e. removal and disposal of dead material off site and for topping up/replacement of bark mulch.

5.6 Proposed Ornamental Shrubs/Groundcover (N/A).

Description – a limited variety of flowering specimen shrubs and groundcover will be used in the front gardens in combination with specimen trees. This planting is chosen as a low maintenance option which will provide a continuous food source for wildlife and is complimentary to the specimen trees. This will help to create an attractive and leafy character which can be further developed by incoming residents.

Management Objectives

The management objectives for new shrub and groundcover planting are to: Ensure the satisfactory establishment and growth of new ornamental planting; Maintain planting in a healthy and attractive condition and ensure continuity of the design approach and amenity value of planting.

Annual Works

i) Weeding: Remove all weed growth by hand as necessary to ensure weed free and tidy planting areas. Eight visits are required per growing season. Visits should occur approximately monthly in the growing season, subject to a weather conditions from April to October, with an extra visit outside of the growing season in December or January to inspect the condition of the beds. Take great care not to disturb sheet or bark mulch; top up bark mulch levels where necessary for the first 3 years, using the same or similar product to that previously supplied. Note: For planting using a nonbiodegradable weed suppressant membrane, reduce visits to 4 times per year in the growing season. Where a biodegradable weed suppressant fabric has been used, this will have disappeared within the establishment phase. Weeding frequency should therefore be varied according to the site and density of vegetation cover and in any event, should be between 4 and 8 i.e. whatever is required to achieve a weed free scheme. All weeds shall be removed from the site.

ii) Spot Herbicides: Where required, persistent perennial weeds can be controlled using herbicide. For planting beds containing herbaceous plants and shrubs, apply a suitable folia-acting systemic translocated herbicide using a weed wiper device to avoid killing

wanted plants. The use of herbicides should only be made following a risk assessment to consider potential effects on the environment and on human health, but also spray drift killing the wrong plants. The purchase, transport and storage of herbicides are regulated by Part III of the Food and Environment Protection Act 1985, Control of Pesticides (Amendment) Regulations 1997; the Health and Safety at Work Act 1974; the COSHH Regulations, the product COSHH sheet and EC Directive 91/414/EEC (the "Authorization Directive") and the Plant Protection Products Regulations 1995 as amended by the Plant Protection Products (Basic Conditions) Regulations 1997. All herbicides must have an appropriate full or "off-label" approval for use in a relevant situation. Refer to the Pesticide Safety Directive, for which the website is given here for your assistance: www.pesticides.gov.uk. All pesticides shall be applied in suitable calm weather conditions; allow for repeat spraying as required to achieve a complete kill. Apply herbicide as required and at intervals to ensure no regeneration of weed, usually equating to four sprays per year during the growing season at 6-week intervals, from late April onwards. The timing of visits may vary according to weather conditions. Extreme care must be taken to avoid damage to surrounding plants and grass, and to avoid spray drift. Any damage resulting from incorrect usage, spillage, and spray drift, to be rectified immediately.

iii) General planting maintenance: At each visit firm in and straighten any loose plants. Top up bark mulch levels where necessary for the first 3 years, using the same or similar product to that previously supplied to maintain an approximate depth of 50mm to reduce competition from weeds and retain soil moisture. All shrubs shall be fertilised using an approved liquid feed (N10:P15:K10) at a rate of 60g/m² during early May and late September.

iv) Pruning of ornamental planting: Prune back shrubs in the period between October to March in accordance with sound horticultural practices, pruning back to a node, shoot or bud; prune out dead, leggy and broken branches, without damage to the natural habit or appearance of plant without box clipping or rounding off plants. Prune out crossover branches, invasive suckers, dead wood, damaged stems, any spindly growths and any epicormic growth that will weaken the plant. Prune back Rosacaceous and quick and leggy growing plants much harder than other species, but prune back by no more than 30% in any one-year. Prune Cornus varieties back to 200mm above ground every 3rd year, but retaining any young growths. Cut back Lavender after flowering. In terms of herbaceous plants cut back all deciduous grasses in spring by removing dead stems before new growth starts to appear. Prune Geraniums hard after flowering to reduce foliage by 80%.

v) Watering: Water both shrubs and specimens during dry periods (being any period without substantial rainfall for 14 days or more). Water all shrubs to field capacity (minimum 10 litres per m²) and water all large specimens at 10 litres each. Apply water at a frequency of up to 2 times per week from April to the end of September (to a maximum of 15 visits in any one calendar year) as required during any continuous hot weather lasting more than 7 days. The frequency of these visits shall be dependent upon an assessment of climatic conditions. Where restrictions are placed on the use of water, sources and costs of obtaining second class water shall be investigated. Any plant failures or excessive die back from drought stress shall be made good.

<u>Occasional Works</u>

Replacement and enhancement planting: Cut back any shrubs and herbaceous plants where they have become old, misshapen, leggy or they have lost their vigour. Also, prevent encroachment onto carriageway or parking bays. Specimens, shrubs or herbaceous plants that fail to show growth or develop full foliage (including plants damaged during management operations), where such plant failure leaves a gap in the foliage not filled by adjacent plants, shall be replaced with stock of the size, species and quality originally specified. Include any plants that are destroyed by vandalism, theft or similar cause. Specimens, shrubs or herbaceous plants so replaced shall be the same as those specified, previously supplied and approved. Nursery stock shall be container grown and shall be a minimum stock size of a 1L pot. Planting should be implemented and maintained in accordance with good horticultural practice. Include any works necessary to enable planting to be properly carried out i.e. removal and disposal of dead material off site and for topping up/replacement of bark mulch. Once annually the site shall be considered for the need for any strategic replacement or enhancement planting, to broaden the age class of vegetation in the interests of the long-term sustainability of strategically important vegetation.

5.7 Proposed Amenity Grass & Bulbs

Description - Areas of cultivated amenity grass with bulbs are incorporated into selected front gardens, the site entrance and public open space. The mowing frequency will be related to the grass mix. (please refer to advice note in the appendices). Due to the presence of bulbs these grass areas will generally be subject to a lower frequency cutting regime for aesthetic reasons, the height of the sward can be varied according to amenity and to ensure nature conservation benefits.

Management Objectives

The management objectives for amenity grass areas will be to: To ensure the satisfactory establishment of the low maintenance grass sward and bulbs; and to maintain healthy and suitable grass areas, appropriate to function and use.

Annual Works

i) Mowing and edging: Amenity grass areas shall be mown in order to maintain the visual amenity of the area. Mowing frequency and height shall be adjusted the function and use of each area. All grass shall be mown initially with a rotary mower once during the spring (mid-March), to a height of 50mm and thereafter using a cylinder mower, collecting the arisings each time, and removing off site. Delay cutting of grass areas containing bulbs, (including a 150mm margin) until late June once bulbs have finished flowering and the leaves have wilted after deadheading bulbs in May. Soft edges between grass areas and planting beds shall be kept free from grass by cutting the grass with a 'half-moon' edging tool to ensure a neat, clean-cut finish once per year at the start of the growing season. The edge of paving and shrub beds shall be kept free of grass using strimmers or edge clippers once per month during the growing season.

ii) General lawn care: the application of an approved turf fertilizer, selective weed killer and moss retardant in May and September is optional. If chosen it should be applied strictly in accordance with the manufacturer's instructions, Control of Pesticide Regulations, COSHH

Regulations and product COSHH sheet in suitable weather conditions. Otherwise amenity grass areas shall be weeded either by hand or (especially persistent weeds) herbicide treated in order to maintain the visual amenity of the area.

iii) Watering amenity grass areas: During the first 3 years following initial seeding or following re-seeding operations, water amenity grass areas during periods of extreme drought (2 or more weeks without substantial rainfall) to a maximum of 15 occasions. After establishment continue to water only if deemed to be required. To aid the natural establishment of grass areas, only water where unavoidable, where the grass is going brown and appears to be suffering from severe drought stress. When watering, water to field capacity (minimum 20L/m2) in the morning or in the evening to reduce water evaporation, when the water is more likely to reach the roots. The frequency of watering will be dependent upon climatic conditions. Where restrictions are placed on the use of water, sources and costs of obtaining second class water shall be investigated.

Occasional Works

Replacement of failed turf: Small areas of dead, dying or failing grass and bulbs shall initially be made good through changes to the mowing regime or through temporary protection of high wear areas using temporary fencing or similar. Larger areas of degradation may require re-cultivating and reseeding. Cut out sections of distressed and failing or dead areas of turf using a suitable turf-stripping machine or for small areas by hand. Supply and lay new turf of a suitable standard and lay flush with existing sward, filling any cracks and top dressing with a 70:30 ratio mix of sand and screened topsoil. This sand/soil mix shall also contain grass seed of the same or similar species to the turf. For more wholesale degradation of the turf sward, the entire area will require to be re-seeded. Cultivate or power-harrow the affected area until a fine tilth is achieved (removing stones greater than 20mm) and grade until level with adjoining areas. Apply a pre-seeding fertilizer at a rate of 70g/m² and seed with a general amenity seed mix, raking until the seed is a few millimetres below the surface. Water thoroughly and maintain the soil in a moist condition, removing stones, weeding and mowing until the grass is established.

5.8 Proposed Wildflower Meadows/Grassland

Description - The Areas A and C will be seeded with a wildflower grass seed mix. The grassland will incorporate a diversity of wildflower and grass species (appropriate to the microclimate and silty loam soil type) to benefit a variety of species including birds, bats and invertebrates. To maximise biodiversity the area will cut once annually. A regularly mown path will be incorporated into Area A to accommodate access for residents. The specified seed mix is EN 1 supplied by Emorsgate Seeds for a flower rich meadow. Suppliers' trade literature relating to seed mix, establishment and management is included in the appendices.

Management Objectives

The management objectives for wildflower grassland areas will be to: To ensure the satisfactory establishment of the grass sward; and to maintain a healthy and biodiverse sward suitable for a range of wildlife.

Annual Works

i) Cutting of wildflower areas: Meadow grass and wildflower areas shall be cut only once a year to a height of 100mm in late August. To ensure that soil fertility is reduced, rake up the arisings immediately, or in hot dry weather, they can be left in situ for a maximum of 2 days to set seed before raking. In a warm and wet year, a second cut may be required and if so this should be carried out either in October or March as appropriate. The timing of all cutting operations should take into consideration any protected species (such as reptiles) that may be present. There may be an additional requirement for monitoring or a watching brief by a qualified ecologist to ensure that no protected species are present. Once cut and raked up, all arisings shall be collected and removed off site as agreed.

ii) General care: Hand weed pernicious, ruderal and aggressive or invasive weeds to maintain the visual amenity of the area. Do not herbicide or fertilise.

Occasional Works

Replacement of failed wildflower grassland areas: Meadow grass and wildflower sward that is species poor shall be enhanced. In areas of low fertility, closely strimming or mow the existing sward and remove all cuttings in August. Rake or scarify to disturb the ground and overseed with a suitable mix of wildflowers selected to the microclimatic and soil conditions and repeatedly tread over the area. After sowing mow the grass to a height of 60mm in height to allow light and air to the emerging seedlings for a full growing season. In areas where soil fertility is too high or the sward has failed the area will require re-cultivating and re-seeding. Remove dead material and re-cultivate the topsoil to a depth of 100mm. Small areas may be reseeded following the autumn cut by spreading the cut arisings onto the bare soil to set seed. For more wholesale degradation, cultivate the affected area until a fine, level tilth is achieved, removing stones greater than 20mm diameter. Do not fertilise or herbicide. Evenly seed with an appropriate seed mix (80% grasses: 20% wildflowers) selected to the microclimatic and soil conditions at the specified rate. Carefully rake in thoroughly to ensure that the seed is a few millimetres below the surface and roll using a very light roller or a cylinder mower, ensuring the surface is even and level. Water thoroughly and maintain the soil in a moist condition, removing stones, weeding and mowing until the grass is established.

5.9 Proposed Fencing & Gates

Description – The various types of boundary treatments are shown on the architect's approved layout plan. The fencing includes timber post & rail and close-boarded. Temporary rabbit-proof protective fencing may be used in specific locations to define and enclose new planting areas.

Management Objectives

The management objectives for these areas will be to: protect new planting from browsing animals. To ensure fencing and gates are safe, functional, sound, clean and free from dilapidations, hazards, rot, vandalism or damage.

Annual Works

General maintenance for timber fences: Inspect posts, rails, styles, braces, fixings, latches, bolts, fasteners and paint or stain work. Check that posts are upright and firm. Ensure that fixings show no signs of rust. Record all defects carefully and make arrangements for making good, repair adjusting, tightening or re-painting/ staining as required within seven days.

Occasional Works

Changes and renewals for fencing and gates: Where scheduled inspections report defects to other enclosing elements, that need wholesale replacement, extension or alteration in order to function satisfactorily and to minimise risk of injury or harm, and where such items are found to be beyond repairable condition, then these changes or renewals should be effected immediately. Demolish and remove defective elements and replace or add posts, struts, gates or wire as appropriate. - including carting away the failed and excavated or broken out materials to skip, ensuring all new elements match those existing in all respects, both the material type and gauge/ dimensions and the decorative finish and colour.

Any protective fencing is intended to be removed once a satisfactory establishment phase is complete. This will be subject to an assessment by the landscape contractor on behalf of the management company but is likely to be somewhere within the first 3-5 years of planting.

6.0 INTEGRATED PEST (WEED, INSECT, AND DISEASE) MANAGMENT

"Integrated Pest Management, or IPM, is an approach to pest control [weeds, insects, and diseases] that uses regular monitoring to determine if and when treatments are needed, and employs physical, mechanical, cultural, and biological tactics to keep pest numbers low enough to prevent intolerable damage or annoyance. Least-toxic chemical controls are used as a last resort."

As well as the benefits to biodiversity there are significant cost savings to be gained by this approach. General IPM Steps and Methods IPM Steps Include:

1) Prevention first: plant vigorous, pest-resistant, site-adapted varieties. Plan cultural practices to minimize pests (watering, mulching, pruning, etc.).

2) Identify/know the pest (weed, etc.) life cycle.

3) Set action thresholds – tolerate some damage.

4) Monitor regularly (keep records of monitoring).

5) When pests exceed threshold, use control method with the least non-target impact. (Try cultural, physical, or biological methods first. Avoid using pesticides if practicable. Any pesticides used must be non-residual/biodegradable. As a last resort, use spot applications of least toxic chemical.) Only treat when the pest is most vulnerable and its natural enemies are in their least susceptible life stage.

6) Keep records of control methods and results, evaluate, and adapt cultural practices.

7) Replace problem plants/designs with more pest, disease, and weed-resistant varieties.

Integrated Pest Management techniques for controlling weeds include mulching, pulling, allowing plantings to grow densely and shade ground, heat and hot water controls. As a preventative measure control all weeds before they go to seed. If herbicides must be used, choose the least toxic available and spot apply on weeds. **The use of Pre-emergent herbicides is to be discouraged** – maintaining a thick mulch layer combined with mechanical weeding is as effective.

7.0 IMPLEMENTATION, MONITORING AND REVIEW

7.1 The newly formed management company will coordinate all management of the site in perpetuity in accordance with this Landscape Management Plan and the accompanying maintenance schedule.

7.2 The owners may appoint from time to time consultants to provide specialist advice, monitoring or to undertake a watching brief in relation to particular aspects of this site or specific maintenance operations. This may include suitably qualified ecologists, arboriculturists, landscape architects, engineers and/or health and safety professionals.

7.3 All works, materials and operations will be in accordance with relevant legislation, British Standards, Regulations (including the CDM Regulations) and Codes of Practice.

7.4 Process for Monitoring and Review

7.4.1 The Landscape Management Plan and maintenance schedule will be monitored and assessed for their effectiveness on an annual basis for the first 7 years following the completion of the development.

7.4.2 Each annual review will be coordinated and completed by a suitably qualified representative of the management company. The review will include advice from specialist consultants as required (such as an arboriculturist, ecologist, project landscape architect or landscape manager.

7.4.3 To this end the review shall may include (as appropriate):

Specialist reports - advising on aspects such as protected species, general sylvicultural husbandry and health and safety issues; Records or attendance sheets demonstrating the maintenance work undertaken; and a walk over assessment of the landscape areas to assess landscape components and their condition, and the need for enhancement.

7.4.4 The review should identify any changes to site conditions and circumstances, whether the aims and objectives of the Landscape Management Plan are being met, and where identified changes are needed to existing management practices and timeframes. Furthermore, any strategic enhancements, including new and replacement planting should be identified and priorities established for undertaking these works.

7.5.5 Within 1 calendar month of the review, a revised Landscape Management Plan shall be produced (if appropriate), and circulated to stakeholders. Within 7 years of the completion of the

site, then the revised document shall be submitted to the LPA as a non-material amendment to the previously approved Landscape Management Plan.

7.5.6 After the first 7 years, the Landscape Management Plan will be reviewed every five years, or as required to ensure the satisfactory management of the landscape in perpetuity.

Jonathan Biggadike

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APPENDICES

SOFT LANDSCAPE SPECIFICATION

1. **General Matters**

All works shall be carried out in accordance with BS4428, Code of Practice for General Landscape Operations. Where the specification below contradicts forms of any British Standards, the specification below shall take precedence.

2. **Herbicides and Pesticides**

a. Herbicides and Pesticides shall be listed in the current Agricultural Chemical Approval Scheme, approved under the Control of Pesticide Regulation 1986 treated. All applications of herbicide shall be undertaken in strict accordance with the Control of Substances Hazardous to Health (COSHH) regulations and be applied in accordance with current legislation (FEPA) by licensed operators. Rates shall be as recommended by the manufacturer.

b. The management company and landscape contractor must take all reasonable precautions to protect the health of human beings, creatures and to safeguard the environment. Care must be taken not to damage shrubs, trees, bulbs, grass surfaces or other planted material, whether owned by the Employer, or other parties and damage caused shall be made good at the Contractor's expense. To these ends maximum precautions must be taken to obtain accurate application of herbicides during suitable weather conditions.

3. **Ground Preparations, Topsoil**

a. Imported topsoil – Topsoil whether retained or imported shall comply with BS3882.1994.

b. Subsoil treatment – Prior to spreading topsoil, the subsoil shall be cleared of all rubbish, stones, bricks, concrete and other foreign matter. The subsoil shall then be thoroughly cultivated so that it is loose and free draining to a depth of 300 mm.

c. Finished levels of topsoil in beds after settlement shall be 50 mm below paving level to allow for mulch and 150 mm below the damp proof course level of any adjoining buildings. Turf shall be 50 mm above adjoining pavements, inspection covers and kerbs.

4. **Plant Material**

Plant material shall be good quality, well-shaped and with an adequate root system in compliance with the relevant British Standards BS3936 and BS4043.

5. **Handling of Plant Material**

To be in accordance with the Plant Handling Code by HTA and BS4043 for root balled trees. Adequate protection shall be given to all trees and plants to preclude failure due to lack of moisture of exposure during temporary storage on site. Bare root plants must be heeled in on the day of arrival and no bare roots shall be exposed at any time. All plants be moist at the time of planting.

6. **Planting, Staking Protection**

All work shall be carried out in accordance with BS4428 and BS5236 by qualified or experienced staff in accordance with recognised good horticultural practice.

7. **Trees**

a. Tree planting shall be done before shrub planting commences.

b. Tree pits shall have a width 300 mm greater than the width of the root ball and a depth of at least 200 mm greater than the root ball depth. Bare root tree pits shall be 600 mm cube for standard. The topsoil excavated shall be left alongside the pits for re-use. Any subsoil arising from pit excavations shall be removed off site. Sides of pits shall be roughened and the bottom loosened to a depth of 150 mm.

c. Staking – Stakes to be peeled, 75 mm diameter pointed with no snags or projections as per BS4428. All trees below 10 cm girth shall be single staked, driven in the ground to 900 mm below finished levels, tops to be just below the canopy. Ties to be Rainbow type or similar approved product with a buffer.

d. Trees above 10 cm girth shall be double staked with 50 – 75 mm diameter staked driven vertically into the bottom of the pit close to either side of the root ball to a depth of at least 900 mm below finished level. The tops of the stakes shall be 150 mm below the canopy. Each tree shall be securely fixed to the stakes with two reinforced 2.5 cm wide rubber or Hessian tree tie loops, fixed to the stakes with galvanised clout nails. Along roads the stakes shall be positioned parallel to the kerbs.

8. **Mulch**

All planted areas and 1 m2 around the stem of all trees in grass shall be mulched with a 50 mm layer of graded bark (15 – 50 mm diameter). Bark should be capable of good stability and be subjected to wind blow. Mulch shall be applied after watering. The final level after soil settlement, planting and mulching shall be even with adjacent kerbs and paved surfaces and 50 mm above adjacent lawns.

Schedule of Maintenance Operations

Maintenance Operation	**Number of Visits** (to be dependent on season – where not dependent on season, if appropriate, the timing shall be agreed between the Adopting Organisation and the Contractor. Indicative timings are shown with a *)					**Total number of visits per year**	**Additional Comments**
	Jan – March (13 weeks)	April – June (13 weeks)	July – Aug (9 weeks)	Sept – Oct (9 weeks)	Nov –Dec (8 weeks)		
GENERAL							
Collection and removal of litter and other debris	Once per month	Once per month	Once per month	Once per month	Once per month	12	All hard and soft areas. Cart away litter/debris and remove off site to licensed tip.
PAVING							
Inspection and sweeping	Once per month	Once per month	Once per month	Once per month	Once per fortnight while leaves dropping	14	Document any defects, recommend methodology and carry out remedial works as required.
SOFT WORKS							
Visual inspection of mature trees	Once per month	Once per month	Once per month	Once per month	Once per month	12	On each visit or as required.
Annual Arboricultural Assessment of mature trees and hedgerows		*	*	*		1 (plus additional visits as required)	To be completed by a qualified arboriculturist annually when trees are in leaf or as required when visual inspections identify a health and safety risk.
SOFT WORKS							

Maintenance Operation	**Number of Visits** (to be dependent on season – where not dependent on season, if appropriate, the timing shall be agreed between the Adopting Organisation and the Contractor. Indicative timings are shown with a *)					**Total number of visits per year**	**Additional Comments**
	Jan – March (13 weeks)	April – June (13 weeks)	July – Aug (9 weeks)	Sept – Oct (9 weeks)	Nov –Dec (8 weeks)		
Tree Surgery and significant works to boundary vegetation/hedgerows	*				*	1	As identified by arboricultural assessment following approvals from LPA. To be carried out outside of the bird nesting season and following advice from an ecologist.
Cutting/trimming of native hedgerows	*				*	1	To be carried out outside of the bird nesting season.
Cutting of ornamental hedgerows			Once in June	Once in late november		2	Or as required to maintain a formal appearance.
Hand weeding		Once per month	Once a month	Once per month	*	4-8	Weed by hand taking care not to disturb sheet or bark mulch. Remove arisings off site.
Spot herbiciding	Once in late March		Once in late June, once in mid-August	Once in mid-October		4	To occur at approximately 6 week intervals only if required.
Watering		Once per fortnight	Once per fortnight	Once per fortnight		15	Water once per fortnight from April to September until trees/plants/grass areas are established. Watering frequency should be adjusted

Maintenance Operation	**Number of Visits** (to be dependent on season – where not dependent on season, if appropriate, the timing shall be agreed between the Adopting Organisation and the Contractor. Indicative timings are shown with a *)					**Total number of visits per year**	**Additional Comments**
	Jan – March (13 weeks)	April – June (13 weeks)	July – Aug (9 weeks)	Sept – Oct (9 weeks)	Nov –Dec (8 weeks)		
							by the Landscape Management Contractor depending on climatic conditions. Increase watering during hot and dry weather until plants have established.
General maintenance of planted areas	*	Optimum time for application of bark mulch	*	*	*	12	Check at each visit. Apply bark mulch as and when required within the first 3 years.
Fertilising trees and shrubs		Once in early May		Once in mid-September		2	Fertilize new trees and planting, once in early May and once in late September. Use a slow release product, ideally granular.
Checking, adjusting, replacing or removing tree stakes and ties	*	*	*	*	*	12	At each visit as required
Pruning trees and shrubs	Optimum time for Buddleia & Cornus				Optimum time for most species	1	As required to sound horticultural practice between October and March. Cut back grasses in spring.
Cutting formal lawns	Only if required from start of growing season	Once per week	Once every fortnight	Once per week	As required to finish of growing season	Max 20 per year according	Mowing frequency to be adjusted according to climatic conditions and use. Reduce frequency to fortnightly in hot and dry weather. Collect and remove arisings at each cutting.

Maintenance Operation	**Number of Visits** (to be dependent on season – where not dependent on season, if appropriate, the timing shall be agreed between the Adopting Organisation and the Contractor. Indicative timings are shown with a *)					**Total number of visits per year**	**Additional Comments**
	Jan – March (13 weeks)	April – June (13 weeks)	July – Aug (9 weeks)	Sept – Oct (9 weeks)	Nov –Dec (8 weeks)		
Cutting amenity grass areas	Only if required from start of growing season	Once every fortnight	Once every 3 weeks	Once every fortnight	As required to finish of growing season	12-15 times per year	Mowing frequency to be adjusted according to climatic conditions and use. Reduce frequency to every 21 days in hot and dry weather.
Edging lawns and amenity grass areas		Once per month	Once per month	Once per month		7	Re-profile and edge shrub beds at start of growing season with half moon tool, then strim or cut margins with edging shears throughout growing season.
General lawn care		Once		Once		2	Apply a fertiliser, selective weedkiller and moss retardant in May and September.
Cutting wildflower grassland	*		Once in late August	*		1	In hot dry weather leave cuttings to set seed for 2 days before collecting and removing off site. Cut again in October or in March if required due to weather conditions. Cutting may be varied by ecologist if reptiles are present.
Replacement of tree, hedgerow and shrub planting	*				Optimum time for most species	1	As required. To include enhancement planting.

Maintenance Operation	**Number of Visits** (to be dependent on season – where not dependent on season, if appropriate, the timing shall be agreed between the Adopting Organisation and the Contractor. Indicative timings are shown with a *)					**Total number of visits per year**	**Additional Comments**
	Jan – March (13 weeks)	April – June (13 weeks)	July – Aug (9 weeks)	Sept – Oct (9 weeks)	Nov –Dec (8 weeks)		
Replacement of amenity grass and wildflower areas				Optimum time		1	As required.

PLANTING SCHEDULE

All native nursery stock to be supplied by Aveland Trees, Yew Tree Cottage, Main Rd, Bourne, Lincs PE10 0NB. Telephone: 01778 440716.

TREES

No.	Botanical Name	Common Name	Size/Form	Root
2	Acer campestre	Field maple	L.S.	B.R.
1	Acer davidii 'George Forrest'	Snake bark maple	L.S.	B.R.
1	Acer ginnala	Japanese Maple variety	L.S.	B.R.
1	Acer japonicum	Japanese Maple variety	F.S.	B.R.
2	Acer japonicum 'Aureum'	Japanese Maple variety	F.S.	B.R.
1	Acer jap. 'Vitifolium'	Japanese Maple variety	L.S.	B.R.
1	Acer palmatum	Japanese Maple variety	L.S.	B.R.
3	Acer pensylvanicum	Japanese Maple variety	L.S.	B.R.
1	Ailanthus altissima	Tree of heaven	H.S.	R.B.
2	Alnus glutinosa	Common alder	L.S.	B.R.
1	Alnus glutinosa 'Imperialis'	Ornamental alder	H.S.	R.B.
12	Amelanchier lamarckii	Snowy mespilus	L.S.	B.R.
1	Betula pendula	Silver birch	Feathered	B.R.
6	Betula utilis	Birch	Feathered	B.R.
1	Carpinus betulis 'Columnaris'	Hornbeam variety	H.S.	R.B.
2	Crataegus x lavellei	Ornamental thorn	L.S.	B.R.
1	Crataegus oxyacantha 'Paul's scarlet'	Ornamental thorn	L.S.	B.R.
1	Cotoneaster frigida	-	_	C10.
2	Fagus sylvatica	Beech	Sel. Stand.	R.B.
1	Fagus sylvatica Asplenifolia	Fern leaved beach	H.S.	R.B.
2	Laurus nobilis	Bay tree	-	C5.
3	Malus floribunda	Ornamental crab	L.S.	B.R.
2	Malus 'Golden Hornet'	Ornamental crab	L.S.	B.R.
1	Malus 'John Downie'	Ornamental crab	L.S.	B.R.
2	Malus profusion	Ornamental crab	L.S.	B.R.
2	Malus trilobata	Ornamental crab	L.S.	B.R.

1	Malus tschonoskii	Ornamental crab	L.S.	B.R.
1	Prunus ‘Amanogawa’	Japanese cherry	L.S.	B.R.
1	Prunus avium ‘Plena’	Flowering cherry	L.S.	B.R.
2	Prunus dulcis	Almond	L.S.	B.R.
4	Prunus hillieri x ‘Spire’	Flowering cherry	L.S.	B.R.
1	Prunus Sargentii	Flowering cherry	L.S.	B.R.
1	Prunus ‘Hai Taku’	Great white cherry	L.S.	B.R.
3	Pyrus nivalis	Ornamental pear	L.S.	B.R.
3	Quercus robur	English oak	Sel. Stand.	R.B.
1	Rhus typhina	Stag’s horn sumach	-	C10
1	Salix alba	White willow	H.S.	R.B.
1	Sorbus aria	Whitebeam	L.S.	B.R.
3	Sorbus aria ‘Lutescens’	Whitebeam variety	L.S.	B.R.
1	Sorbus aucuparia	Rowan	L.S.	B.R.
6	Sorbus aucuparia ‘fastigiata’	Fastigiate rowan	L.S.	B.R.
1	Sorbus ‘Joseph Rock’	Rowan variety	L.S.	B.R.
1	Sorbus X kewensis	Rowan variety	L.S.	B.R.
1	Tilia cordata	Small leafed lime	Sel. Stand.	R.B.
2	Tilia x euchlora	Clean lime	Sel. Stand.	R.B.

WHIPS/TRANSPLANTS

165	Acer campestre	Field maple	1+1	B.R.
120	Corylus avellana	Hazel	1+1	B.R.
130	Cornus sanguinea	Common dogwood	1+1	B.R.
365	Crataegus laevigata	Midland hawthorn	1+1	B.R.
1070	Crataegus monogyna	Hawthorn	1+1	B.R.
20	Ligustrum vulgare	Wild privet	1+1	B.R.
20	Malus sylvestris	Common crab apple	1+1	B.R.
20	Prunus avium	Wild cherry	1+1	B.R.

605	Prunus spinosa	Blackthorn/sloe	1+1	B.R.
10	Pyrus communis	Wild pear	1+1	B.R.
110	Rosa canina	Dog rose/briar	1+1	B.R.
10	Sorbus torminalis	Wild service tree	1+1	B.R.
135	Ulmus procera	English elm	1+1	B.R.
165	Viburnum opulus	Guelder rose	1+1	B.R.
165	Ilex aquifolium	Holly	30-40cm	1L

CONIFERS

4	Juniperus communis 'Hibernica'	Irish juniper
1	Pinus 'Griffithii'	Bhutan pine
1	Pinus mugo	Mountain pine
1	Pinus nigra	Austrian pine
1	Pinus pinea	Umbrella pine
1	Pinus sylvestris	Scots pine
2	Taxus baccata 'fastigiata'	Fastigiate yew

NB Sizes of all conifers to be confirmed subject to availability.

Wildflower & grass seeding

All wildflower and grass seed to be supplied by Emorsgate Seeds. To be sown in accordance with the supplier's recommendations at a rate of 4 g per square meter unless stated otherwise.

Area A (IDB easement) - EN1 Special pollen & nectar meadow mixture.

Area B (public open space) – EG22c Strong lawn grass mixture & clover (25 g/m²).

Areas C (public open space) – EH1 Grass & wildflower mix for hedgerows & woodlands.

Bulb Planting

- 150 no. Narcissus pseudo-narcissus (daffodil) to be planted in Area B (public open space.

- 100 no. Narcissus pseudo-narcissus (daffodil) to be planted in Area D.

- 150 no. Narcissus pseudo-narcissus (daffodil) to be planted on the amenity space near Hedge D.*

- 200 no. Tulipa (mixed) to be planted opposite area D.

*please note these bulbs have not been labelled on the planting plan (drawing number WG/18/01).

"Specialist growers of British wild flower and wild grass seeds."

EMORSGATE SEEDS

By Appointment to HRH The Prince of Wales Suppliers of Wild Flower and Grass Seeds Emorsgate Seeds

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EN1 – SPECIAL POLLEN AND NECTAR MEADOW MIXTURE

Composition

This meadow mixture is designed to create flower rich grassland with a particular emphasis on species which are known to be important as sources of pollen and nectar for bees, butterflies, hoverflies and other insects.

Wild Flowers

%	Latin name	Common name
0.5	Achillea millefolium	Yarrow
1.6	Centaurea nigra	Common Knapweed
1	Centaurea scabiosa	Greater Knapweed
1	Daucus carota	Wild Carrot
2	Echium vulgare	Viper's Bugloss
0.5	Eupatorium cannabinum	Hemp Agrimony
1.5	Galium verum	Lady's Bedstraw
0.5	Knautia arvensis	Field Scabious
0.4	Leontodon hispidus	Rough Hawkbit
0.8	Leucanthemum vulgare	Oxeye Daisy
1.7	Lotus corniculatus	Birdsfoot Trefoil
1	Onobrychis viciifolia	Sainfoin
0.2	Origanum vulgare	Wild Marjoram
0.3	Primula veris	Cowslip
2	Prunella vulgaris	Selfheal
0.1	Pulicaria dysenterica	Common Fleabane
1.8	Ranunculus acris	Meadow Buttercup
1.5	Rhinanthus minor	Yellow Rattle
1	Silene dioica	Red Campion

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0.2	Trifolium pratense	Wild Red Clover
0.4	Vicia cracca	Tufted Vetch
20		

Grasses

%	Latin name	Common name
10	Agrostis capillaris	Common Bent
2	Anthoxanthum odoratum	Sweet Vernal-grass (w)
2	Briza media	Quaking Grass (w)
32	Cynosurus cristatus	Crested Dogstail
10	Festuca ovina	Sheep's Fescue
20	Festuca rubra	Slender-creeping Red-fescue
3	Phleum bertolonii	Smaller Cat's-tail
1	Trisetum flavescens	Yellow Oat-grass (w)
80		

Sowing Rates

kg/ha	kg/acre	g/m^2	Order Mixture
40	16	4	Order this mixture

Growing guide

Like our EM3 special general purpose mixture, EN1 contains a wide range of species making this mix suitable for sowing on a wide range of soil types. The varied species in EN1F have diverse requirements: some like wet soils, some like free draining or chalky soils. These requirements are unlikely to be met for all species in any one location. However it is reasonable to expect a good selection of species to establish on most sites, the balance of which will reflect local conditions.

Ground preparation

Endeavour to select ground that is not highly fertile and does not have a problem with perennial weeds. Good preparation is essential to success so aim to control weeds and produce a good quality seed bed before sowing.

To prepare a seed bed, first remove weeds using repeated cultivation or a herbicide. Then plough or dig to bury the surface vegetation, harrow or rake to produce a medium tilth, and roll, or tread, to produce a firm surface. (more on preparation)

Sowing

Seed is best sown in the autumn or spring but can be sown at other times of the year if there is sufficient warmth and moisture. The seed must be surface sown and can be applied by machine or broadcast by hand. To get an even distribution and avoid running out, divide the seed into two or more parts and sow in overlapping sections. Do not incorporate or cover the seed but firm in with a roll, or by treading, to give good soil/seed contact. (more on sowing)

Aftercare

First year management

Most sown meadow wild flower and grass species are perennial; they will be slow to germinate and grow and will not usually flower in their first growing season. There will often be a flush of annual weeds from the soil in the first growing season which may grow up and obscure the meadow seedlings beneath. This annual weed growth is easily controlled by topping or mowing.

Mow newly sown meadows regularly throughout the first year of establishment to a height of 40-60mm, removing cuttings if dense. This will control annual weeds and help maintain balance between faster growing grasses and slower developing wild flowers.

Avoid cutting in the spring and early summer if the mixture has been sown with a nurse cover of cornfield annuals, or is autumn sown and contains Yellow Rattle. These sown annuals should be allowed to flower, then in mid-summer cut back and the cut vegetation removed. It is important to cut back cornfield annuals before they die back, set seed or collapse: this cut will reveal the developing meadow mixture and give it the space it needs to develop.

Carefully dig out or spot treat any residual perennial weeds such as docks.

For more detail see grassland management

Management once established

In the second and subsequent years EN1 sowings can be managed in a number of ways which, in association with soil fertility, will determine the character of the grassland. The best results are usually obtained by traditional meadow management based around a main summer hay cut, in combination with autumn and possibly spring mowing or grazing.

Meadow grassland is not cut or grazed from spring through to late July/August to give the sown species an opportunity to flower. After flowering in July or August take a 'hay cut': cut back with a scythe, petrol strimmer or tractor mower to around 50mm. Leave the 'hay' to dry and shed seed for 1-7 days then remove from site.

Mow or graze the re-growth through to late autumn/winter to c 50mm and again in spring if needed.

(more on grassland management)

Because of their importance to bees, EN1 contains a higher proportion of clover and legumes than other Emorsgate mixtures. As as result you may experience years in which legumes produce luxuriant dominant growth - particularly on soils low in Nitrogen but high in Phosphates. This 'boom' in legumes usually lasts only a year or two and can be managed by rigorous mowing.

EN1 is a complete mix composed of 20% native wild flowers and 80% slow growing grasses (by weight). The flower and grass components are also available to order separately as EN1F for the flower component and EG5 for the grass component.

Additional Advice Notes – Establishing Wildflower Meadows

Seeds

- Remove all existing weeds and other material, if necessary use an appropriate systematic weed killer.
- If the area has been overgrown with weeds for several years, it is important to reduce the number of weed seeds in the soil, it may be necessary therefore to allow time for the first flush of weeds to germinate then remove before attempting to sow any wildflowers.
- Wildflowers prefer a poor soil with low nutrients, if practical remove any good quality top soil.
- Once the weeds have been removed prepare soil to a fine tilth ready for sowing your wildflowers.
- Try not to disturb the soil any further as this may bring more weed seeds to the surface.
- Choose a wildflower mixture suitable for your soil conditions, if uncertain, remember to think what your soil is like during the growing period from March - October (most soils during the winter can be heavy and wet).
- Sowing times can be any time during the period end-March - end October the ideal time being autumn, but avoid the hot summer months.
- Sow seed at 5 gms/m2, it should not be necessary to rake the seed over as the light helps germination on many species.
- To assist sowing it is advisable to mix the wildflower seed with a carrier (dry sand or compost). This will help in distributing the seed evenly over a large area.
- The nurse grasses will appear within 7 - 10 days; the wildflowers may vary depending upon species - some may take only a few weeks, while others can take several months.
- Cornfield Annuals will flower the same year if sown during the spring or the previous autumn.
- Perennial wildflower species will establish during the first year of sowing and flower during the second year.

Bulbs

- All our bulbs are suitable for naturalising in conditions that are close to their natural habitat. This means woodland types will thrive in the shade of shrubs and small garden trees. Wetland plant will thrive in boggy areas around a garden pond, etc.
- Bulbs grow best planted when they are dormant in the late summer and autumn. At this time, they can be planted in large drifts in grass or under trees. Some bulbs are supplied as freshly lifted for immediate planting.
- The key to successful planting is good preparation, making sure that the ground is weed free and the grass cut short.
- In general, bulbs should be planted at a depth equal to the height of the bulb, except: snowdrops (5 cm); summer snowflakes (10 cm); daffodils (10 cm); bluebells (5 - 10 cm); snake's head fritillary (10 cm); wood anenome (2 cm).

Maintaining a Wildflower Meadow / Garden

- The nurse grasses will be the first to establish within a few weeks, they will be quite open to allow the wildflower seedlings to germinate in the spaces around the younger grass seedlings.

- The germination of wildflower species will vary - some may take only a few weeks, while others may take several months depending on the sowing time.

- While young wildflower plants are establishing the grass will need to be kept reasonably tidy. In the first year of sowing, the nurse grasses will require to be cut twice during spring at 5 cm, remain uncut during the summer, then a further couple of cuts in the autumn, again at 5 cm.

- Depending on the mixture and time of year sown, it is unlikely that any of the perennial flowers will appear during the first year of establishment.

- It is possible to have a "splash" of colour during the first year if the Cornfield Annuals mixture is incorporated at the same time of sowing.

- Once the flowers are established during the second year, there is a slight change to the cutting regime in that the first cut in the autumn should be done without the mower box attached, thus allowing the mature seed heads to shed their seed back into the soil.

- Leave for 2 - 3 weeks. During this time, the seed heads will dry out and release seed back into the soil, the final cut will tidy the whole area and remove any dead material.

- It is important to return the fresh seed from each year's harvest back into your soil, as this will help to maintain a regular supply of new plants for future years.

PLANTING NOTES

The beech hedge is to be planted in a single row at 450 mm centres.

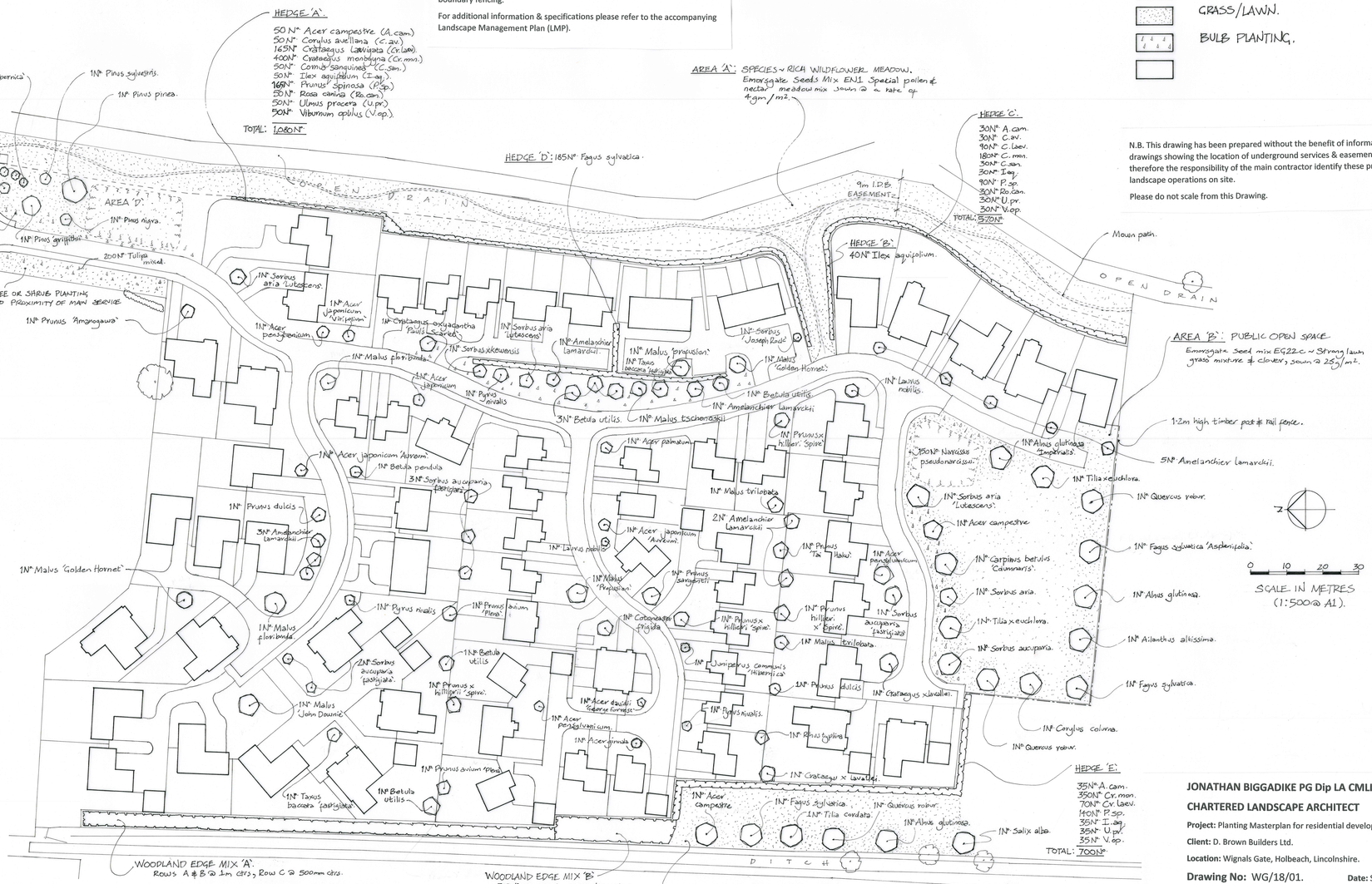
The native mixed hedges are to be planted in 2 rows 250mm apart and at 450mm centres (6 plants /linear metre). Hollies to be planted in groups of no less than 3no. and blackthorn in groups of no less than 5no.

The woodland edge mixes A & B are to be no closer than 1m to the adjacent boundary fencing.

For additional information & specifications please refer to the accompanying Landscape Management Plan (LMP).

KEY.

- SPECIMEN TREE.
- SHRUB BED.
- HEDGEROW.
- GRASS/LAWN.
- BULB PLANTING.



WOODLAND EDGE MIX 'A'.
Rows A & B @ 1m ctrs, Row C @ 500mm ctrs.

Rows A & B: 30 No. A.cam, 30 No. C.av, 20 No. Cr.laev, 20 No. Cr.mon, 30 No. C.san, L.vulg 20 No., 10 No. Malus sylvestris, 20 No. P.sv, 10 No. P.sp, 10 No. Pyrus communis, 10 No. Ro.can, 10 No. Sorbus torminalis, 20 No. U.pr, 30 No. V.op. Total: 260 No.

Row C: 120 No. Cr.mon, 20 No. Cr.laev, 100 No. P.sp, 10 No. I.aq. Total: 260 No.

WOODLAND EDGE MIX 'B'
5 No. rows set 1m apart, transplants @ random/staggered 1m ctrs.
20 No. A.cam, 10 No. C.av, 20 No. C.san, 10 No. Malus sylvestris, 100 No. P.sp, 20 No. Ro.can, 20 No. V.op.
TOTAL: 200 No.

AREA 'C': PUBLIC OPEN SPACE.
Emorsgate Seeds mix EH1 Grass & Wildflower mixture for Hedgerows & Woodlands, Sown @ 4gm/m2.

N.B. This drawing has been prepared without the benefit of information or drawings showing the location of underground services & easements. It is therefore the responsibility of the main contractor identify these prior to landscape operations on site.

Please do not scale from this Drawing.

JONATHAN BIGGADIKE PG Dip LA CMLI

CHARTERED LANDSCAPE ARCHITECT

Project: Planting Masterplan for residential development.

Client: D. Brown Builders Ltd.

Location: Wignals Gate, Holbeach, Lincolnshire.

Drawing No: WG/18/01. **Date:** Sept. '18.

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Trading as Dragonfly Building Conservation & Landscape Design Ltd.