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SOFT & HARD LANDSCAPING PROPOSALS

for Five Dwelling Development at Southbrook Exeter

On behalf of M Baker (Property Services) Limited

TO BE READ IN CONJUNCTION WITH APLICAITON DRAWINGS

March 2021

Introduction and Background to Document

1 Outline planning permission has been granted on land at Southwood for the development of five dwellings on land adjacent to Southbrook Farm, Whimple, Exeter, Devon, EX5 2PG, (NGR SY 02434 96043), as described in the Design and Access Statement. An extended phase I habitat survey of the site was undertaken on 21 March 2018 by Richard Green Ecology Ltd and informs the landscaping strategy.

2 The ecological report identified that the site consisted of rank improved grassland, a species-poor Devon bank hedge with young trees, bramble scrub and a patch of young woodland. It recorded that it is possible that reptiles, dormice, roosting bats and nesting birds are present in suitable habitats on the site.

3 The proposal is likely to result in the loss of 0.18 ha of rank improved grassland, 0.035 ha of bramble scrub and 0.03 of woodland, totalling approximately 0.25 ha. The proposal requires the translocation of the western hedge in order to create a new visibility splay at the site entrance.

4 It is recommended in the landscaping condition that sufficient areas of habitat be retained and created around the site and managed to enable species, including reptiles, dormice and bats to persist on the site and to travel through it.

5 It is recommended that native species-rich Devon hedges be created along the northern, southern and eastern boundaries of the site. Ideally hedgerows would be used to divide any plots on site. If fences are used to divide plots they should have 125 mm square holes provided at ground level, at 5 m intervals, to allow movement of wildlife, such as hedgehog and reptiles, around the site.

6 It is recommended in the ecological report that the grassland on site be cut to a height of 80 mm during the winter, when reptiles will not be present. The cut material should be removed from site so as not to create a thatch in which reptiles may take refuge. Maintaining the grass at this height will deter reptiles from using the development area. The grass should be maintained at this height by regular cutting in the period leading up to the clearance and development of the site.

7 Woody vegetation should be cleared carefully during the winter (between November and February) whilst dormice are hibernating at ground level, taking care to avoid trampling or compacting the ground around hedges and scrub where hibernating dormice may be present. The ground should then not be cleared until the following late May, when hibernating dormice should have emerged and moved off the site. Alternatively, a summer clearance may be undertaken under direct ecological supervision to ensure no dormice nests are damaged or dormice are at risk of disturbance.

8 Several potential roost features (PRFs) for bats were present within trees on the site. It is recommended that a thorough inspection of these PRFs be made prior to felling. If bats or signs of bats are found then a licence would be required from Natural England in order to fell the tree in question.

9 As the site is within the Exeter and East Devon Growth Point, biodiversity offsetting may be required, using the DEFRA metric to calculate the amount of habitat required to offset the habitats lost to the development. If there is an insufficient area available on the site, a suitable offsite area may be required. It is recommended that the requirement for a detailed ecological planting and management plan to satisfy the DEFRA offsetting metric be made a condition of planning permission.

10 In accordance with the NPPF and local planning policy, it is recommended that one integrated bat box, such as a Schwegler 1FR or similar, be installed in each new dwelling. These boxes should remain unlit and should face suitable linear habitat features, such as hedges. This matter is covered by the architectural plans.

11 It is recommended that three reptile/amphibian hibernacula be constructed within the new hedgerows on site.

12 The landscaping condition, Condition 9, set by the local planning authority on the outline consent states that:

13 *Landscaping details submitted for approval in respect of the associated reserved matter, shall adhere to the Assessment, recommendations and mitigation of the Preliminary Ecological Appraisal dated March 2018 prepared by Richard Green Ecology and received by East Devon District Council on the 20th April 2018.*

14 *The approved landscaping scheme shall be completed for each plot in the first planting season following the completion of the plot development, or in accordance with the approved implementation and management schedule. The landscaping scheme shall be maintained for a period of 5 years from the time of the planting of the last elements of the approved landscaping scheme. Any trees or other plants which die, are damaged or become no longer viable before or during this 5 year period shall be replaced during the next planting season with specimens of the same size and species unless otherwise agreed in writing by the Local Planning Authority.*

15 *(Reason - In the interests of amenity and to preserve and enhance the character and appearance of the area in accordance with Policies D1 (Design and Local Distinctiveness) and D2(Landscape Requirements) of the adopted East Devon Local Plan and with the guidance contained within the National Planning Policy Framework).*

16 The reserved matters application is now being submitted in detail with all aspects, including the landscaping proposals, defined.

17 The red line drawing, design and access statement, architect's plans, highway engineer's plans, elevations and a planning statement support the application and should be referred to when reading this landscaping plan and specification.

18 A hard landscape and landscape planting proposal accompany the application.

19 The following document provides the soft and hard landscaping, tree planting guidelines and methodology to support the landscaping plan. This landscape proposal and maintenance plan is being submitted at the reserved matters application stage to be approved by the Local Planning Authority. The details of this landscape proposal include, as is appropriate for the scale and form of the proposed development:

- A hard landscaping plan
- A soft landscaping plan

- Written specifications (including cultivation and other operations associated with plant and grass establishment)
- Schedules of plants, noting species, planting sizes and proposed numbers /densities where appropriate
- Implementation timetables including a 5 year management plan.

20 This approach will ensure the provision of amenity afforded by appropriate landscape design.

Design Principles

21 The architectural design principles are set out by Ian Booker of Atelier HB. The landscape proposals have been tailored to fit with the architectural design concepts, materials and to dovetail the innovative architectural and traditional design elements into the streetscene.

22 At this juncture in time the site lies between and south of a pair of substantial contemporary dwellings to the north, the western of which is a renovated cottage with a substantial extension and modern south, site-facing façade. This has an influence over the site and influences the site character. To the south is a courtyard of dwellings occupying converted farm buildings with a traditional red brick and slate architecture. The courtyard parking spaces and a former stable face towards the site with the private garden spaces of these dwellings facing south, away from the site. To the east and south-east is agricultural land that is separated from the site by post and rail fences. This land is pastoral in character and bounded on the southern and eastern edges by substantial trees and hedgebank trees.

Figure 1: Aerial view of site

23 The character of Southbrook Lane is defined by garden hedges, brick walls and mature trees on the boundary of Southbrook House garden. This parcel of land has been consented permission for 18 dwellings that will alter the character of the lane and the environs of Southbrook House. Some of the most notable features visible form the lane are the trees, brick details (such as short runs of steps and low

walls) and the gardens that in combination with the variety of architectural styles and periods create a genteel hamlet character. The land to the west of Southbrook house is in the process of being developed for residential use as part of the Cranbrook estate, with the character changing from rural and pastoral to urban and domestic. The landscape character assessment places the area within the Lowland Plains .

24 This LCT occurs on lower land in the western half of the District. It comprises the gently sloping/ undulating land which surrounds the valley floors. This is a medium-large scale settled landscape, with villages and farms displaying a variety of building materials, ages and styles. These include the coastal villages of the Exe Estuary, inland villages and occasional estate farms. Much of the LCT remains rural but parts are influenced by new development at Cranbrook and Exeter Airport, and along transport routes. Fertile red soils are a characteristic and are particularly noticeable where arable land use is dominant. There are surviving pockets of traditional orchards, and areas of pasture, paddocks and small woodlands. Fields are generally surrounded by wide hedgerows, often with mature hedgerow oaks, although some hedgerow loss has occurred. Surrounding higher land provides the visual backdrop, and offers views over the Lowland Plains.

25 Whilst here are no sites of cultural heritage importance within the site boundary, there are many sites of heritage significance in the broader context of the site, and these are mentioned as being important to the local landscape character in the landscape character description.

26 The key characteristics of the **LCT 3E: Lowland Plains** landscape character type are:

27 ***Level to gently sloping or rolling plain*** *between the valley floors and the start of steeper valley sides.*

28 ***Small discrete woodland blocks,*** *and pockets of orchard planting, particularly around Whimple.*

29 ***Mixed farmland,*** *often in arable cultivation.* ***Regular medium to large field pattern*** *with local variation, particularly around settlements. Contains some of the most fertile farmland in the study area.*

30 ***Semi-natural habitats include roadside hedges*** *and hedgerow trees - particularly oaks – streams and pockets of grassland.*

31 *Historic villages, farms and lanes, but some features lost due to ploughing. Notable concentration of historic parklands including veteran trees. Maritime influences on estuary villages.*

32 ***Settled, with a mixed pattern of villages, hamlets*** *and isolated farms.* ***Great variety of building materials and styles, even within single settlements.*** *Cranbrook is a focal point for contemporary buildings and includes large-scale structures.*

33 ***Variable highway network, from*** *sparse rural lanes to motorway and A-roads. Relatively few public rights of way.*

34 ***Surprising feeling of remoteness in some parts.*** *Despite local impacts of development and infrastructure, much of the area retains a pleasant, rural feel.*

35 *Long views over low hedges****. Some views marred by pylons*** *and other infrastructure.*

36 *Surrounding LCTs (for example Estuary and Pebble Bed Heaths) contribute to views and influence character. Lowland Plains visible from surrounding higher LC*

1. The valued landscape attributes are set out under the heading: ***What Makes this Landscape Special.***

37 *Historic small parks and gardens, containing a high proportion of mature and veteran trees.*

38 *The range of settlements and building styles, from sleepy coastal villages to Cranbrook new town.*

39 *Its unassuming but still attractive rural feel, particularly away from larger settlements and roads.*

40 *Its strong visual relationship with surrounding higher landscapes – the Lowland Plains LCT is often seen from above, and is also visually influenced by surrounding LCTs.*

41 Forces for change acting on this LCT are set out in the landscape character assessment, those relevant to the reserved matters stage of this site development are:

- Continued expansion of residential, industrial and infrastructure development, particularly within Greater Exeter Strategic Plan area, and development pressure along A303 and A3052 corridors.
- Continued increase in light and noise pollution from new developments and transport links.

42 The development will not impact on the integrity or health of any valued trees or hedges that are present on the boundaries to the site, however, some hedge restoration measures are required, against the north-western site boundary where the site boundary is overwhelmed by brambles and other invasive species. The south-western roadside hedge is to be breached to facilitate the access and the hedge cleared out and bolstered with native hedge planting, hazel stands and an internal ornamental hornbeam hedge.

43 Accordingly, this report documents the proposed landscaping scheme, that has been designed to meet the requirements of condition 9 and to meet policies D1 and D2.

General requirements of the planting proposals:

44 All landscape tree planting works shall be carried out in accordance with the approved details and to a reasonable standard in accordance with the relevant recommendations of appropriate British Standards or other recognised Codes of Good Practice, as set out in the specification below.

45 Any trees or plants that, within a period of five years after planting, are removed, die or become defective, shall be replaced as set out below.

INTRODUCTION

Soft Landscaping Specification

46 Plants are living things, even when dormant and transplanting and establishment involves them in considerable stress.

47 If the process is to be successful it must be planned, managed and supervised to satisfy the basic biological requirements of the plants.

48 To achieve this, the planting must be followed by a period of planned aftercare, covering at least two growing seasons, and in this scenario 5 years.

49 These recommendations set out the requirements that should be followed and specified in detail according to the situation on each particular site. They assume that the nurseryman supplying the stock has adhered to the "*Recommendations for Plant Handling from lifting until Dispatch*" and the purchaser has specified, and the nurseryman has adhered to, the "*Specification for Packaging and Transporting Nursery Stock*[1]". It is also assumed that the species and plant specification (age, size, etc) are correctly chosen for the geographical location and site conditions.

Soils

Reference:

50 BS 3882: 2015 Specification for Top Soil.

Definitions:

Top soil: Top layer of soil, darker in colour and with more organic matter than the layer below or manufactured to similar properties, generally the top 250-300mm.

Sub-soil: Soil layer extending between the top soil and the little weathered parent material below.

Stripping, handling and retention of top soil:

51 Tracked machinery to be used with access routes planned and suitably protected to minimize soil compaction. Top soil should not be stripped, handled or trafficked:

- in a waterlogged condition
- when the ground is frozen or covered by snow
- when there are pools of water on the ground surface

52 If sustained heavy rainfall (>10mm in 24 hours) occurs during stripping operations then the work must be suspended until the ground has had at least 24 hours to drain or has reached a suitable moisture content (To be agreed on site with the site project manager).

Soil Storage:

53 Retained top soil (free of subsoil, pernicious weeds, demolition or construction rubbish, roots or other contaminants) should be loose tipped in linear heaps on to the agreed & prepared storage site, ensuring

[1] https://www.csdhub.com/wp-content/uploads/2014/12/The-National-Plant-Specification-Handling-and-Establishment.pdf

the heaps do not exceed 1.5m in height and 3m in width. Heap sides should be shaped to allow run off but should not exceed 30°.

54 Weed control to be carried out at monthly intervals to prevent the establishment of pernicious weeds using a translocated non residual herbicide (following consultation with site manager). If the soil is to be stored in excess of 6 months the heaps should be protected from erosion by covering. The heaps will not be used for any other type of storage and no construction plant should drive over them.

Sub-soil grading:

55 Grade sub-soil to smooth flowing contours to achieve finished levels of topsoil no greater than 300mm. Areas of thicker sub-soil to be excavated and removed as required to ensure a depth of cover appropriate to the area (150-300mm). Should subsoil need to be imported to make up any deficiency it should be supplied with reference to section 3.7 and BS3882:2015. Material should be placed in layers no greater than 150mm before consolidating.

56 Minimum depths of subsoil over parent material or artificial structures:

- Tree planting 1000mm
- Shrub planting, grass areas 700mm

Sub-soil preparation

57 Loosening to be carried out with a tracked tractor using a suitable ripping tine to the depths described below after determining the nature of the sub-soil on site:

- Light and non-cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 300 mm.
- Stiff clay and cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 450 mm.
- Rock and chalk subgrades: Lightly scarify to promote free drainage.

Stones: Immediately before spreading topsoil, remove surface stones (larger than 75 mm in any direction), contaminants and any other debris or builders rubble. On completion inform the Project Manager for inspection.

Top soil supply:

58 Soil classification – Multi-purpose imported material as required to make-up any deficiency to specified works. Soil analysis should comply with BS3382 2015 and be within Ph6-7 range. Material should be free from sub-soil, debris or any contaminant that is hazardous to human or animal life or detrimental for plant growth. A representative sample should be sent to the Project Manager for approval before being brought to site.

Top soil spreading:

59 Only after approval from the Project Manager can top soil be spread. This must be carried out in a planned and systematic way to ensure the prepared sub-soil does not become compacted. Top soil must be handled with reference to para 47 **Stripping, handling and retention of top soil**. Top soil to be loose tipped

with a minimum of handling to ensure correct depths and levels. The soil should be consolidated NOT compacted in 100-150mm layers as appropriate to required depth.

60 The site must be allowed to settle for one month before planting operations begin, at which time deficiencies in depths or levels should be addressed. During this fallow period weed control using a translocated non residual herbicide (following consultation with Project Manager) or cultural methods are to be carried out, as required, to control significant weed growth.

Top Soil depths over prepared sub soil

61 In accordance with approved landscaping plan or

- Grass areas minimum 200mm maximum 300mm
- Shrub beds and tree pits minimum 300mm maximum 400mm
- Design of chambers or kerb haunching need to take this into account

Preparation of undisturbed ground:

Existing woody vegetation: Remove existing planting, visible roots and large stones with a diameter greater than 50 mm. Stumps to be ground to 350mm below ground level and arisings removed from site. Plough or dig over to full depth of topsoil ensuring sub-soil is not brought to the surface. Fallow period (minimum) one month before further works.

62 **Existing turf or thick sward:** Apply a translocated non residual herbicide (following consultation with project Manager). After total kill achieved (2-3 weeks) remove visible roots and large stones (with a diameter greater than 50 mm), plough or dig over to the full depth of topsoil, ensuring sub-soil is not brought to the surface. Fallow period (minimum) one month before further works.

63 **Composts, mulches & other bulk soil ameliorants**

Green waste composts supply:

64 Imported sanitised green waste and stabilized composts should be manufactured in accordance with PAS 100. Submit representative sample to Project Manager for approval, together with declaration of analysis if requested. To be used as soil improver and mulch where appropriate.

Application rates as soil improver:

65 General planting: compost etc. applied at the rate of 7.5m3/100 m2 to achieve an even distribution of 75mm depth over planting area. Lawn areas (if required) compost etc. to be applied at the rate of 2.5m3/100 m2 to achieve an even distribution of 25mm depth over planting area. Incorporate into the top 200mm of the top soil using rotary cultivator, or by hand, before planting or lawn establishment works.

Peat: Peat must not be used as a soil ameliorant.

Sand: Horticultural washed sand for lawn top dressing or improving drainage within planting areas. Application rates as required. Particle size of between 0-4mm. Material should be free from pests, disease, fungus, weeds or any contaminant that is hazardous to human or animal life or detrimental for plant growth. Confirm source and analysis to Project Manager before bringing to site.

Bark Mulches:

66 For mulching new tree or shrub planting medium grade ornamental bark mulch particle size 0-30mm, wood content <20%. Dust and fines minimum, durability 1-2 years, FSC certified, free from pests disease fungus weeds or any contaminant that is hazardous to human or animal life or detrimental for plant growth.

Lawn establishment

Timing:

67 Carry out work while soil and conditions are suitable with reference to section on Stripping, handling and retention of topsoil above. Seeding and turfing should normally be carried out between September-October and March-April. Grass sward establishment is possible at other times of year, but will be reliant on irrigation or suitable weather windows. The contractor will be responsible for supplying adequate irrigation until establishment or agreed point of handover.

68 **Specified products:**

69 **General purpose amenity grass seed:** Perennial Ryegrass blend containing 25% Tetragreen, 25% Fabian, 25% Columbine, 25% Berlioz such as Rigby Taylor mix R140 (or product of equal quality approved by Project Manager).

70 **Perennial Wildflower Meadow seed**: Perennial

71 **General purpose amenity turf:** Rolawn Medallion turf (or product of equal quality approved by Project Manager).

Lawn establishment using seed:

Initial preparation:

72 In accordance with soil requirements set out above minimum top soil depth 200mm (maximum 300mm). All banks, verges and landscape features laid to grass must be capable of being cut by ride-on machinery. These areas must, therefore, be graded to a maximum slope of 150 to the horizontal or less.

Consolidation:

73 Lightly consolidate with a light “Cambridge” (Ribbed) type roller or, for smaller areas, by walking with the operatives putting their weight onto their heels and walking systematically over the site in two directions.

Finished levels:

74 Following rolling any variations in levels (hollows and high spots) will be apparent and addressed by adding top soil or spreading the surface layer. Finished layers to meet the falls and levels of the surrounding grassed areas (acceptable variation +25mm to -10mm). Finished level to adjacent hard surfaces, such as drains, kerbs and paving, +25mm above hard surface.

Seed bed preparation:

75 The surface should be lightly and uniformly raked to produce a friable tilth. All surface stones 10mm+ (in any dimension) should be removed from site.

Fertilizer:

76 The area to have a suitable, pre-approved, base fertilizer (6:9:6) applied at the manufacturer's recommended rates.

Seeding:

77 In calm conditions apply pre-approved seed at a rate of 5g per m2 for amenity grassland and at a rate of 15g perm2 for wildflower seeded areas. The calculated seed quantity should be split in two and applied at right angles to each other to ensure an even coverage. Lightly rake in to cover the seed and leave a final level surface. Larger areas can be sown using a suitable seed drill, if conditions allow following consultation with the Project Manager.

Irrigation:

78 Wet the top 100mm (minimum) to full depth of topsoil, ensuring even coverage without displacing seed, seedlings or soil if required. Repeat/apply as necessary to ensure even germination and establishment of all sown areas to result in a healthy, vigorous grass sward, free from the visible effects of pests, weeds and disease.

Turf establishment:

Soil preparation for receiving turf: Initial preparation in accordance with section 3.5-3.9 minimum top soil depth 200mm

Consolidation and finished levels:

79 Lightly consolidate with a light "Cambridge" (Ribbed) type roller, or for smaller areas by walking, with the operatives putting their weight onto their heels and walking systematically over the site in two directions. Following rolling any variations in levels should be addressed by adding top soil or spreading the surface layer. Finished layers to meet the falls and levels of the surrounding grassed areas (acceptable variation +5mm to -10mm). Finished levels with existing hard surfaces such as drains, kerbs and paving level to be 25mm above hard surface.

Turf bed preparation:

80 The surface should be lightly and uniformly raked to produce a friable tilth. All surface stones 20mm+ (in any dimension) should be removed from site. When adjoining existing lawns, a straight edge should be cut into the existing turf to ensure a seamless joint.

Fertilizer:

81 The area to have a suitable, pre-approved, base fertilizer (6:9:6) applied at the manufacturer's recommended rates and guidance.

Turfing conditions:

82 Turf should be laid when the weather is suitable and soil conditions are moist. Turf should not be laid if the area is waterlogged, or when frost is in the ground. Consult with the Project Manager if unsure.

Delivery and stacking:

83 Turf should be delivered to site on the day of laying. Turves must not be stored on site for more than 48 hours. Turves should be stacked to a maximum height of 1.4 m on cleared ground.

Laying:

84 Turves from the stack to be wheeled to the laying area over planks butted together. Adequate timber planks should be used to support persons and loaded barrows. The turves should be laid on the prepared soil bed, working from planks set over previously laid turves, and should be firmed into position in consecutive rows with broken joints (as in stretcher bond brickwork) closely butted and to correct levels. Turf edges and margins should be laid with whole turves. Any inequalities in finished levels should be adjusted as work progresses by raking out and/or packing fine soil under the turf. Finished turf levels should be to existing hard surfaces such as drains, kerbs and paving, to be 25mm above and to existing turf to be 10mm above allowing for final settlement.

Irrigation:

85 Immediately after laying the turf the work area is to be watered using an appropriate overhead spray irrigation system. There should be sufficient water to soak the newly laid turf and, if necessary, the under lying soil to a depth of 75mm. Irrigation to be applied as necessary to prevent turf drying and shrinkage until rooting into the under lying soil is apparent. The contractor will be responsible for supplying adequate irrigation until establishment or agreed point of handover.

On site protection:

86 A light weight plastic mesh type fencing 1m high, or other suitable product, set on pins at 2m intervals should be erected around the newly laid turf and should be left in place until the turf is established.

Lawn edging:

87 After seeded areas are well established ensure edges are clean and straight, or cut to smooth curves. Where they border ornamental plantings an edge, approximately 100mm-125mm deep should be created to permit edging with shears, with the mulch and soil drawn back approximately 100m above the lawn level.

88 After completion of turf laying ensure edges are clean and straight, or cut to smooth curves around. Where they border ornamental plantings an edge, approximately 100mm-125mm deep, should be created to permit edging with shears, with the mulch and soil drawn back approximately 100m above the lawn level.

Completion of works:

89 Ensure all arisings (Soil, turf, stones or other debris) are removed from site. Leave the works in a clean tidy safe condition.

Initial cut of new turf areas

90 The contractor will carry out the first cut when the grass is established to 75 mm high before presenting for hand over. Before cutting, all stones above 25 mm in any dimension to be handpicked and the area crossed with a light weight roller to firm the grass and consolidate the surface. The area will be topped

with a rotary mower so as to leave 40 mm of growth. The grass cutting machinery should be sharp and in good condition to avoid pulling out young seedlings. All arisings should be collected and disposed of off-site or within an area agreed by the Project Manager.

Failures and rectification:

91 At handover seeded and turfed areas will form a close knit, continuous ground cover of even density, height and colour, with vigorous and healthy growth out competing weed growth. After assessment from the Project Manager areas of necessary rectification will be classified as replacement or remediation.

Replacement:

92 To be specified by Project Manager to bring the area to the required standard through cultivation work and/or extra soil followed by seeding or turfing as appropriate and irrigation as required.

93 **Remediation:**

94 Proposals to Project Manager to bring the area to the required standard through remedial works which could include all or some of the following: slitting, spiking, top dressing, over seeding and fertilizer application.

95 **Meadows:**

96 **General requirements:** Use suitable translocated herbicide (notice and proposals to be given to Project Manager) if existing herbage especially pernicious weeds minimum 4 weeks before intended commencement of works. Minimal cultivation to 100mm to produce suitable seed bed using disc or power harrow etc. (Pedestrian rotary cultivator in smaller areas).

97 Lightly consolidate with a light "Cambridge" (Ribbed) type roller, or for smaller areas by walking, with the operatives putting their weight onto their heels and walking systematically over the site in two directions. Following rolling any variations in levels should be addressed by adding sub soil, other pre- approved low nutrient fill or spreading the surface layer. Finished layers to meet the falls and levels of the surrounding grassed areas (acceptable variation +5mm to -10mm). Finished levels with existing hard surfaces such as drains, kerbs and paving level to be 25mm above hard surface. Where it is not possible to form a seed bed with the existing sub straight low nutrient fill (proposals and representative sample to the Project Mnager for approval) should be used to bring up levels and form a seed bed. The fill material should not be played in excess of 100mm.

98 **Seed bed preparation:** The surface should be lightly and uniformly raked to produce a friable tilth. All surface stones 10mm+ (in any dimension) should be removed from site.

99 **Sowing Dates:** Preferred August September or April May immediately after seed bed preparation to minimise erosion and capping.

Sowing rates:

100 In accordance with suppliers' recommendations.

First year maintenance:

101 If growth exceeds 100mm cut at 75mm with flail or rotary mower and remove arisings repeat if sward height exceeds 200mm. Carry out weed control of pernicious weeds such as Nettles (Urtica sp.) and Doc leaves (Rumex sp.).

Preparation for hand over:

102 Suitably qualified person to carry out species count over 10 randomly placed transects (Per 100 m2) with species count report to Project Manager. Where the species mix does not match the specified mix contractor to carry out over planting using plug plants of the defective species. At least 70 % ground cover to be achieved at hand over.

Minor Works within Landscaped Areas

Service trenches within lawns:

103 Consult with Project Manager with regards to turf retention. Turf must be re-laid within 48 hours.

104 Turf to be retained to be cut using a turf cutter (25mm thickness) and cut in to pieces no greater than 1.2m long and rolled. The retained turfs are to be covered with hessian or plastic sheeting to prevent drying.

105 Trench excavated using ground protection as required to prevent damage to adjacent lawn.

106 Spoil to be placed on protective sheeting or boards with sub and top soil kept separate.

107 On completion of installation back-fill with sub-soil but allow for 200-300mm of top soil cover. Ensure service run is adequately consolidated to prevent subsequent subsidence before placement of the top soil. Top soil consolidated in layers no greater than 150mm by walking, the operatives putting their weight onto their heels and walking systematically over the site.

108 Finished layers to meet the falls and levels of the surrounding grassed areas (to be +25mm for seed, level for turf). Finished levels to existing hard surfaces such as drains, kerbs and paving +25mm.

109 The surface should be lightly and uniformly raked to produce a friable tilth. All surface stones 10mm+ (in any dimension) to be removed from site.

110 Replace turf, ensuring any gaps are filled with stone free soil or, in calm conditions, apply an over seeding with pre-approved seed at a rate of 35-50g per m2 and lightly rake in to cover the seed and leave a final level surface.

111 Remove all arisings from site leaving it in a clean and safe condition.

Service trenches within existing landscaping or within the vicinity of trees

112 Consult with Project Manager with regards to planting retention and tree protection.

113 Trench excavated using hand digging methods and ground protection as required around retained planting and tree to prevent damage to roots. Where hand digging is specified no roots > 15mm diameter are to be severed.

114 Spoil to be placed on protective sheeting or boards with sub and top soil kept separate.

115 On completion of installation back fill with sub-soil (where tree roots have been retained carefully pack soil around) but allowing for 200-300mm of top soil cover. Ensure service run adequately consolidated to prevent subsequent subsidence before placement of top soil. Top soil consolidated in layers no greater than 150mm by walking; the operatives putting their weight onto their heels and walking systematically over the site.

116 Finished level to meet the falls and levels of the surrounding areas. Finished level with existing hard surfaces such as drains, kerbs and paving level

117 The surface should be lightly and uniformly cultivated to produce a friable tilth all surface stones 25mm+ (in any dimension) to be removed from site.

118 Replace existing plants as agreed with reference to section below covering Amenity Planting.

119 As far as reasonably possible match existing mulching material.

120 Remove all arisings from site leaving it in a clean and safe condition.

121 Make good any deficiencies in levels or sward cover after 3 months.

Amenity Planting

Key objectives & considerations:

- Beds must be presented to the Project Manager for inspection before planting begins
- Plants must be presented to the Project Manager for inspection before planting begins
- Success is dependent on good plant handling, planting and aftercare

Soil preparation for shrub/ornamental planting areas:

122 Prepare soil as specified appropriate to the site. Ensure that all visible roots and large stones with a diameter greater than 50 mm are removed. Spread sanitized imported green waste and stabilized composts at 7.5m3/100 m2 (75mm depth over planting area). Incorporate into the top 200mm of the soil using a rotary cultivator or by manual means.

Finished levels:

123 Level to existing hard surfaces such as drains, kerbs and paving. Level to lawn edges 100mm -125mm above (including mulch coverage) with an edge strip.

Surface finish:

124 The surface should be lightly and uniformly cultivated to produce a friable tilth. All surface stones 50mm+ (in any dimension) to be removed from site.

Fertilizer application:

125 Apply pre-approved controlled release (8-9 Months) planting fertiliser 11-21-9+6MgO at the manufacturers recommended rates and incorporated into the top 150mm of the soil prior setting out and planting.

Soil Conditions before planting:

126 Soil conditions should be moist & friable, NOT waterlogged, frozen or snow covered.

Climatic conditions:

127 No planting to be carried out in extremes of temperature <3°c or > 24°c (without consultation with the Project Manager and provision for irrigation). If the water supply is, or is likely to be, restricted by emergency legislation then planting should be suspended. Planting in periods of forecast high wind, especially in low or high temperature, must be avoided.

Times of year for planting:

128 Bare root and container grown deciduous shrubs: Late October to late March. Root balled and container grown evergreens: September/ October or April/ May.Container grown plants can be planted at other times, but only after consultation with the Project Manager and only if adequate irrigation can be provided.

Supply of shrubs and plants:

129 The contractor will ensure that, on delivery to site, plants will have the following attributes:

130 Condition: Materially undamaged, sturdy, healthy and vigorous.

131 Appearance: Of good shape and without elongated shoots.

132 Hardiness: Grown in a suitable environment and hardened off.

133 Health: Free from pests, diseases, discoloration, weeds and physiological disorders.

134 Budded or grafted plants: Bottom worked.

135 Species: Labelled with full botanical name, true to type as specified, substitution will be allowed only after the written approval from the Project Manager.

136 Provenance: Country of origin with appropriate EU plant passport.

137 Contact Project Manager for inspection of nursery stock before planning begins.

Supply of root balled shrubs and plants:

138 Only to be used following consultation with the Project Manager. Root balls are to be well filled with fibrous roots and cohesive natural soil which has been carefully lifted with the plant and remains attached to the root system. Bare root plants, which have been bagged with soil or containerised will not be accepted.

Plant handling, storage and transport

139 Plants to be handled and dispatched in accordance with the National Plant Specification - Handling and establishment with special reference to the following:

140 Frost: Protect bare root plants and frost susceptible plants.

141 Handling: Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.

142 Plant packaging: Bare root material to be sealed in co-extruded black and white polyethylene bags.

143 Handling of bulk quantities: Consult with the Project Manager with regards to storage and care before planting.

Plant quality:

144 Should be in accordance with BS3936, ensuring before planting that:

145 **Plant nutrition:** Plant foliage is not showing signs of chlorosis due to nutrient deficiency.

146 **Plants:** Centred and stable within containers.

147 **Root growth:** Substantially filling containers, but not root bound, and in a condition conducive to successful transplanting.

148 **Moisture:** Root ball soaked to full depth of container no signs of drought, stress or foliage scorch.

149 **Hardiness:** Grown in the open for at least two months before being supplied.

150 **Containers:** With holes adequate for drainage when placed on any substrate commonly used under irrigation systems.

Planting: Spacing:

151 Place plants on the prepared ground at the specified density, ensuring an equal distance between plants.

Excavation of planting hole:

152 Excavate planting hole, ensure that the hole is the correct depth when the plant is placed in the hole, Containerised: The top of root ball should be level with the soil surface.

153 Root Balled: Nursery mark level with the soil surface.

154 Bare root: Root flare at surface of soil transplants.

155 The hole must be wide enough to easily accommodate the root ball:

Planting:

156 Position the planting upright, with best side to the front where appropriate.

Backfilling:

157 Check planting depth before cutting the sides of the hole into the planting hole. Consolidate ensuring good soil to root ball contact.

Finishing:

158 Lightly firm soil around plants and cultivate soil surface with hand tools, without damaging roots, to a fine level tilth with no hollows.

Watering:

159 Water plants immediately after planting in order to settle the plants. Where the planting bed is not at field capacity, water thoroughly, to full depth of top soil without damaging or displacing plants or soil.

Mulching:

160 Carefully spread bark mulch (as specified above) or green waste compost (as specified above.), ensuring plants are not damaged or buried. Finished appearance: level with mulch flicked back from turf edges to allow maintenance. Depth of mulch minimum 75mm maximum100mm ensuring stem collars are not buried.

Finishing:

161 Ensure any damaged plant material is carefully pruned to the nearest bud using sharp secateurs. Any arisings (subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, and rubbish or pruning material) are to be removed from site.

Handling of bare root plant material:

162 The material is to be supplied and stored in co-extruded black and white polyethylene bags and temporarily stored in a frost free area pre-planting. At planting the material should be carefully bought to site but must not be removed from the bag until ready to be placed into a prepared hole and back filled immediately.

163 **Hedge planting:**

164 Shrubs for hedges: Consistent in species, cultivar and clone to ensure a uniform hedge. Planting: In trenches large enough to take full spread of roots. Set out plants evenly but ensure bare root material is handled in accordance with handling of bare root material.

Subsequent irrigation:

165 First year (March-October) post planting: Ensure that full depth of top soil remains moist. Apply irrigation evenly to the site without damaging or displacing plants or soil, to ensure successful establishment and good plant health.

Failures:

166 Plant replacements as original specification will be supplied and planted in the next available planting window or as agreed with the Project Manager.

Specimen Tree Planting: Key objectives & considerations:

- Early engagement with Project Manager required to ensure suitable species selection
- Present stock for inspection prior to planting
- Trees poorly handled or stored will be rejected
- Planting depth is critical any trees planted too deep will be rejected

References:

167 BS 8545: 2014 - Trees: From nursery to independence in the landscape - The National Plant Specification - Handling and establishment.

Soil conditions before planting:

168 Soil conditions should be moist & friable, NOT waterlogged, frozen or snow covered.

Climatic conditions:

169 No planting to be carried out in extremes of temperature <3°c or > 24°c (without consultation with the Project Manager and provision for irrigation). If the water supply is, or is likely to be, restricted by emergency legislation then planting should be suspended. Planting in periods of forecast high wind, especially in low or high temperature, must be avoided.

Times of year for planting:

170 Container grown trees from late September- mid March (Optimum Late September-November) Bare root deciduous trees: Mid October (as available) up to mid-March. (Optimum October-December) Container grown conifers and evergreen trees: September/ October or April/ May. Container grown trees and conifers can be planted at other times but only if adequate irrigation can be provided.

Tree quality:

171 Tree stock to be in accordance with BS3936: Nursery Stock Part 1 Trees and Shrubs.

Supply of trees

172 Preferred supplier: Barcham Trees PLC, Eye Hill Drove, Soham, Ely, Cambridgeshire CB7 5XF Phone: 01353 720748
Alternative suppliers need to be approved in writing by the Project Manager

173 The contractor will ensure that, upon delivery to site, trees will have the following attributes:

- Condition: Materially undamaged, sturdy, healthy and vigorous.
- Appearance: A clearly defined leader, a balanced branching framework subordinate to the central leader evenly spaced along the stem, defined stem taper.
- Budded or grafted plants: Bottom worked, free from the signs of graft incompatibility e.g. disproportionate growth of stock or scion, excessive sucker growth.
- Plant nutrition: Plant foliage is not showing any signs of chlorosis due to nutrient deficiency.
- Health: Free from pests, diseases, discoloration, weeds and physiological disorders.
- Plants: Centred and stable within containers.
- Root growth: Substantially filling containers and able to hold the compost together, but not root bound, and in a condition conducive to successful transplanting.
- Moisture: Root ball soaked to full depth of container no signs of drought stress or foliage scorch.
- Containers: Trees supplied are within Barcham light pots, or similar approved container, which stimulates fibrous root growth, with holes adequate for drainage when placed on any substrate commonly used under irrigation systems.
- Hardiness: Grown in a suitable environment and hardened off.

- Species: Labelled with full botanical name, true to type as specified, substitution only after approval from the Project Manager. The contactor is liable for all replacement costs if not true to type.

- Provenance: Country of origin known with appropriate EU plant passport if applicable. Contact Project Manager for inspection of stock before planning begins. Material not considered to be in an appropriate condition or standard will not be accepted.

Supply of root balled or bare root material:

174 Only to be considered if containerised material not available, or, if small sized, e.g. whips or transplants are specified. Use to be agreed (in writing) with Project Manager.

175 **Root balled material:**

176 Root balls are to be well filled with fibrous roots and cohesive natural soil, which has been carefully lifted with the plant and remains attached to the root system. Bare root plants which have been bagged with soil or containerised will not be accepted.

Bare root material: To be supplied in co-extruded black and white polyethylene bags tied and bundled in groups appropriate to the size and material. A high proportion of fibrous roots should be evident.

Plant handling, storage and transport:

177 Plants to be handled and dispatched in accordance with the National plant specification, with special reference to the following:

- Frost: Protect bare root plants and frost susceptible plants.

- Handling: Trees must be handled with care. Protect from mechanical damage. Do not subject to shock.

- Ensure adequate staff levels are available to take delivery.

- Trees to be protected from falling before planting e.g. carefully lay against hedge at 45°

- Plant packaging: Bare root material to be sealed in co-extruded Black and white polyethylene bags.

Planting pits:

Hard landscaped areas:

178 Planting pits within hard landscaped areas need to be designed after evaluation of the site conditions. The pit must be of sufficient volume to ensure successful establishment through to maturity. The final tree pit design should be agreed with the Project Manager.

Soft landscaped areas:

179 The majority of tree planting takes place within the parkland setting of the Site, in areas of lawn, grassland or soft landscaping plantings and therefore a more generic approach to planting pits can be taken.

Excavation of planting pit:

180 To be carried out by hand. The top and sub-soils are to be kept separate. Place excavated material on boards or sheeting to protect the surrounding grass if necessary. The pit width should be determined by measuring the container or root ball width, ensuring that the pit width is wide enough to provide a

minimum 100mm clearance around the root ball. The pit depth should be determined by measuring the height of the container or root ball to ensure that the trees root flare will be clearly visible on the soil surface when placed in the pit. The base of the pit should not be disturbed unless there are specific problems of poor drainage or soil smearing resulting from pit construction; in this situation the pit sides should be scarified using hand tools.

Planting:

Placement within planting pit:

181 The trees root system should be wetted prior to planting. The tree should be positioned in the planting pit ensuring the best side is to the front, where appropriate. Any damaged branches should be removed using sharp secateurs to an appropriate pruning point before placing the tree in the pit. The root flair or root transition must be level with the host soil or surface. It may be necessary to expose the root flare by carefully removing the surface compost and fibrous roots if the tree has been put too deep in the container when in the nursery. When the tree is correctly positioned remove the container or other root wrappings.

Backfilling:

182 Backfill with sub-soil first (if necessary) in order to match the soil profile that surrounds the pit; the topsoil must not exceed 300mm in depth on completion. Back fill should be added gradually in layers of no more than 150mm, firming gently to eliminate air pockets. Do not excessively compact.

183 During backfilling, ensure the tree remains straight. The final 100mm layer should not be consolidated but should be of sufficient depth to allow for settlement and mulch. Immediately after planting, the tree pit should be saturated to field capacity. Should the turf surrounding a tree pit become compacted during planting operations this should be relieved using a garden fork to penetrate the ground to a depth of 200mm.

Tree furniture and staking:

Support systems:

184 Support systems should be installed at planting stage, ensuring stakes are not driven through root balls or irrigation tubes. Double staked, equally spaced and upright. Damaged stakes should be cut cleanly at the same height. Flexible ties should be used with spacers to ensure that the tree does not make contact with the stake. The tree should be tied at approximately one third of the trees height and removed within 24months of planting.

Irrigation tubes:

185 Such as 'Green Leaf Root Rain Urban' or similar products approved by the Project Manager should be installed in accordance with the manufacturer's specification. The irrigation tube should be placed in the prepared planting pit surrounding the entire root ball prior to backfilling.

Tree mulching: Suitable materials:

186 Composted bark as described above should be used for tree mulching. Alternative materials to be approved, by the Project Manager prior to use and sample provided.

Mulching:

Carefully spread mulch to depth of 75mm over the planting pit area (to a minimum 500mm diameter from tree base) ensuring that the mulch does not make contact with the tree stem. After applying mulch ensure it is clear 100mm diameter (hand width) from the tree stem. Do not use hand tools. Ensure irrigation tubes are not buried with mulch material.

Finishing:

187 Ensure all arisings from tree planting operations are removed from site.

Failures:

188 Tree replacements as original specification will be supplied and planted in the next available planting window or as agreed with the Project Manager

189 **Woodland / Hedge whip or transplant planting: Key objectives & considerations:**

Early engagement with Project Manager required to ensure suitable species selection

- New planting should not negatively impact on existing trees especially veterans
- Trees poorly handled are likely to be dead before planting

Tree stock:

190 Tree stock to be within accordance with BS3936: Nursery Stock Part 1 trees and shrubs with fibrous root system evident.

Tree Provenance:

191 Native tree species FC provenance zone 405 certificate of conformity required.

Stock size and age:

192 Typically 1+1 40-60cm.

193 **Timing:** Bare root deciduous trees: Mid October (as available) up to mid-March. (Optimum October-December) Container grown conifers and evergreen trees: September/ October or April/ May. Container grown trees and conifers can be planted at other times but only if adequate irrigation can be provided.

Handling and storage prior to planting:

194 As above.

Soil Conditions before planting:

195 Soil conditions should be moist & friable, NOT waterlogged, frozen or snow covered.

Spacing:

196 Approximately 4 per meter run for hedge plants as specified. Positioned in straight lines edges of planting to be irregular to produce scalloped edges to maximise habitat value.

Site preparation:

Surface vegetation clearance: Clear an area one metre diameter around each planting station, or 50cm each side of hedge line.

Planting hole:

197 Excavate by hand. The hole should be large enough to easily accommodate the root system. Consult with Project Manager with alternative proposals if soil conditions are appropriate e.g. Mechanical auger.

Planting:

198 Ensure tree roots are moist and remain in the planting bag at all times until placed in the hole and immediately back filled. Position tree in hole and "cut" the surrounding soil using a spade. Back fill the excavated material. The root flair or root transition must be level with the host soil after backfilling and gently consolidating.

Mulching:

199 Composted bark, as above. Alternative materials must be approved, by the Project Manager prior to use and a sample provided. Carefully spread mulch to depth of 75mm over the planting area or a minimum 500mm diameter from tree base ensuring mulch does not make contact with the tree stem. After applying mulch clear 100mm diameter (hand width) from the tree stem by hand do not use hand tools.

Tree shelters, spirals or mesh cages:

200 Preferred product Tubex shrub tube 75 cm 130-160mm diameter secured with single wooden stake 90cm 32mm2 Submit proposals to Project Manager for alternative products round shelters only will be considered. Carefully positioned over mulched transplant ensuring branches are not damaged secure shelter with two cable ties to driven wooden stake. Stake to support full length of shelter but below shelter lip. Shelter to be upright and undistorted.

Failures:

201 Tree replacements as original specification will be supplied and planted in the next available planting window or as agreed with the Project Manager.

Maintenance

Key objectives & considerations:

- Maintenance to be carried out in accordance with Maintenance specification general notes below.
- Regular maintenance visits to achieve the specification are required by the Project Manager and landscaping scheme to be maintained for a minimum of 5 years in accordance with Condition 9 of the outline planning permission superseded by the Reserved matters consent.

Duration:

202 Carry out the operations in the following clauses until the end of the rectification/maintenance period (Typically one calendar year from completion of all landscaping operations) or until handover, and then general maintenance for another 5 years.

Failures of planting and rectifications:

203 Defects are defined as materials or workmanship which are not in accordance with the contract resulting in plants/ trees/ shrubs that fail to thrive. This specification excludes damage from theft or malicious damage after completion.

204 Replacements: Should match the size of adjacent or nearby plants of same species or match original specification, whichever is the greater. Timing of making good: next suitable planting season or by agreement with the Project Manager.

Landscaping maintenance general requirements:

Weed control:

205 Maintain weed free area around each tree and shrub. Diameter (minimum): The larger of 1m or the surface of original planting pit. Keep planting beds clear of weeds by hand, hoeing or chemical control, subject to agreement for Project Manager.

Lawn maintenance:

206 Grass length to be kept between 25mm-75mm, between March – December cut with appropriate equipment for the site. Cut round all obstructions. Border edges to be in a neat cut condition with edges as described above.

Young tree maintenance:

207 Staking: Check condition of stakes, ties, guys and guards replace broken or missing items. Adjust ties to accommodate growth and prevent rubbing. Gently firm loosened soil around trees/ shrubs. Straighten leaning trees/ shrubs. Frequency of checks: At each scheduled maintenance visit. Precautions: Ensure that trees and shrubs are not damaged by weed control or grass cutting operations.

Mulch:

208 Top up mulch levels (using matching material) surrounding trees and within beds to 75mm at the end of the maintenance period, with reference to previous mulch notes.

Irrigation:

209 Regular watering to ensure the top soil remains moist surrounding the planting(s). Note: Tree pits will normally require irrigation to the pit surface as well as irrigation tube.

Pruning:

210 Dead, damaged, diseased wood and suckers should be removed using sharp secateurs.

Site clearance:

211 Leave the works in a clean, tidy and safe condition after any maintenance operations. Remove all arisings from site.

Hedge Maintenance

212 Maintenance: Some weed control will be needed. The line of the new hedge must be kept weed free for 3-4 years to allow the plants to establish. Any plant which competes with the hedgerow plants for

nutrients, moisture and light, including brambles, nettles and grasses, is likely to reduce growth rates. Any dead plants need to be replaced like-for-like for the first five years.

213 Trim and shape the hedge without cutting the leading shoots until the required length is reached (1.4m for stock-proof hedge, 1.8m for shelter hedge).

214 It must be decided at an early stage whether the hedge will be laid. A well laid hedge is stock-proof and attractive and after 3-4 years forms a better habitat for birds than a trimmed hedge.

• If to be laid: The Plants will need to be sided up until the leaders have reached pleaching height (2.5-3.5m). Usually laid after 8-15 years.

• If not laid: All the shoots should be trimmed from the first year to produce dense bush growth.

5-Year After-care Management

215 External space shall be maintained by the Developers agent during the time of implementation. Thereafter the maintenance of all landscaped areas will be the responsibility of the residents.

Regular visits:

Recommended maintenance to include the following operations:

- Hand weed planting beds;
- Remove litter;
- Sweep mulch spillage;
- Re-firm plant stock as necessary;
- Adjust stakes and ties as necessary;
- Prune plant stock as required to encourage good form and maintain the width of footways;
- Check all plant stock and report signs of pests, disease, death and damage;
- Maintain paths free of debris and overhanging plants;
- Inspect paths for build-up of algae and apply treatment to maintain a slip free surface.

Watering:

216 Recommended plant stock to receive the following quantities of water in the first 24 months:

- Standard trees - 25 litres on 10 occasions throughout the growing season, or when less than 30mm precipitation at the end of any 4 week period
- Semi mature trees - 25 litres on 10 occasions throughout the growing season, or when less than 30mm precipitation at the end of any 4 week period
- Hedgerows - 20 litres per m2 on three occasions throughout growing season, or when less than 30mm precipitation at the end of any 4 week period
- Shrub borders - on 10 occasions throughout the growing season, or when less than 30mm precipitation at the end of any 4 week period.

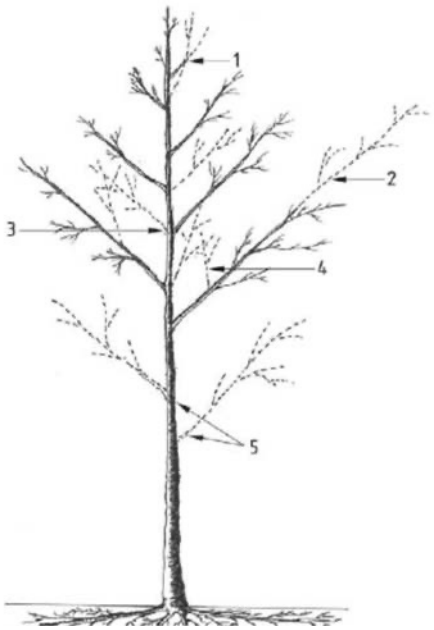
217 **Management of new trees:**

218 Trees shall be inspected every autumn in order to assess their condition and identify tree work requirements. Tree works shall be carried out in accordance with the recommendations of the assessment in accordance with BS8545 Trees from Nursery to Independence in the Landscape.

Maintenance

219 Trees may require maintenance to ensure long-term good health. Likely extension growth following pruning:

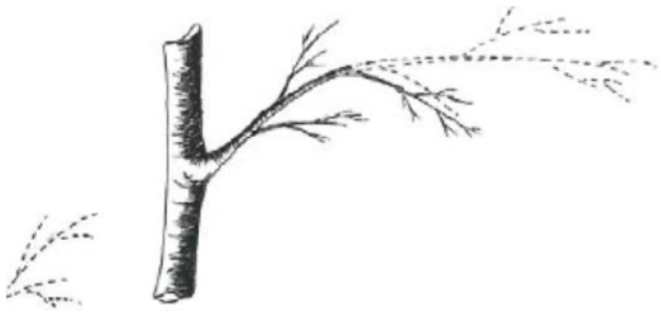
220



221 Formative pruning of trees (BS8545:2014)

- Co dominant leader to be removed
- Over vigorous laterals to be subordinated
- Opposite branches to be removed
- Upright growth into crown to be removed
- Lower branches from nursery to be kept subordinated and to not form part of final scaffold.

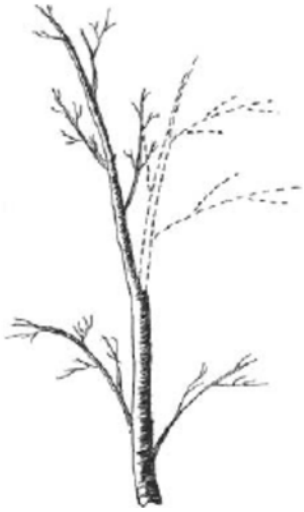
222



223 Lateral branches subordinated to retain size at no more than 50% diameter of main stem at point of attachment.

224

225 Included branch unions or weak forks to be pruned out.



226

227 Co-dominant leaders to be pruned out or subordinated to the main leader.

228 Any trees or plants that, within a period of five years after planting, are removed, die or become, in the opinion of the Local Planning Authority, seriously damaged or defective, will be replaced as soon as is reasonably practicable with others of species, size and number as originally approved, unless the Local Planning Authority gives its written consent to any variation. The reason for this is to ensure the provision, establishment and maintenance of a reasonable standard of landscape in accordance with the approved designs**.**

Hedgerows:

229 Trim outside of the bird nesting season in late February. Maintain hedgerow at 0.70m width and 1.2m high.

Grass cutting:

230 Grass to be cut throughout the first growing season to maintain a sward of 35mm. To be edged and clippings removed and watered as necessary.

Management plan:

	Year 1	Year 2	Year 3	Year 4	Year 5
Shrub pruning	Maintain good form. Remove herbaceous material in spring before new growth. Replace, dead dying and diseased stock Climbers to be re tied where necessary and supporting wires applied	Maintain good form. Remove herbaceous material in spring before new growth. Replace, dead dying and diseased stock Top up mulch Climbers to be re tied where necessary and supporting wires applied	Maintain good form. Remove herbaceous material in spring before new growth. Replace, dead dying and diseased stock Climbers to be re tied where necessary and supporting wires applied	Maintain good form. Remove herbaceous material in spring before new growth. Replace, dead dying and diseased stock Top up mulch Climbers to be re tied where necessary and supporting wires applied	Maintain good form. Remove herbaceous material in spring before new growth. Replace, dead dying and diseased stock Climbers to be re tied where necessary and supporting wires applied
Lawn care	Regular mowing throughout the first growing season Maintain tidy edges and remove arisings	Regular mowing throughout the first growing season Maintain tidy edges and remove arisings	Regular mowing throughout the first growing season Maintain tidy edges and remove arisings	Regular mowing throughout the first growing season Maintain tidy edges and remove arisings	Regular mowing throughout the first growing season Maintain tidy edges and remove arisings
Hard landscaped areas	Apply herbicide when necessary Remove litter from surfaces and gullies	Apply herbicide when necessary Remove litter from surfaces and gullies	Apply herbicide when necessary Remove litter from surfaces and gullies	Apply herbicide when necessary Remove litter from surfaces and gullies	Apply herbicide when necessary Remove litter from surfaces and gullies
Hedgerows	Formative pruning, reduce to 75cm to encourage bushy growth.	Formative pruning, reduce to 1m to encourage bushy growth.	Maintain at 1.2m height and 70cm width.	Maintain at 1.2m height and 70cm width.	Maintain at 1.2m height and 70cm width.
Inspection of tree health	Yearly Check tree health. Ensure good form by formative pruning	Yearly Check tree health. Ensure good form by formative pruning	Yearly Check tree health. Ensure good form by formative pruning	Yearly Check tree health. Replace, dead dying and diseased stock Remove stakes and ties	Yearly Check tree health. Replace, dead dying and diseased stock

Hard Landscaping Specification

Signage, lighting and other street furniture: Key objectives & considerations:

- Items to be positioned to avoid maintenance problems
- Street furniture to be placed within a hard landscaping detail in lawn areas

Planning:

231 Signage, any CCTV, lighting and street furniture proposals to be agreed with Project Manager, before orders are placed, to ensure positions do not restrict maintenance. Tree root protection areas are to be avoided.

Positioning:

232 The creation of "dead areas" inaccessible to machinery which require hand mowing must be avoided or a hard landscaping solution must be provided by the project. Signage, lighting and other street furniture must not block sight lines or be positioned within areas of soft landscaping which will require continual pruning.

Street lighting:

CCTV:

233 CCTV must not be positioned within the canopies of existing trees with cable runs planned to avoid tree RPA's. New tree planting should not share the same space as CCTV.

Installation within turf areas:

234 Signage and other street furniture to have hard surface below. The surface to be of bespoke design to ensure minimum 300mm clearance around obstruction and 25mm below turf level. Mowing equipment to be able to pass by and over the obstruction. A solid non jointed kerbed surface, appropriate to the surrounding area, to be agreed with Project Manager.

Hard landscaping around buildings and fixed structures

Private Dwelling Car Parking Spaces

235 Car parking spaces to be formed from brick setts. Brick setts in buff to be installed in bands to be formed from two staggered rows of **Natural Stone Split Setts 210 x 110 x 50mm** setts in Autumn Bronze laid in a stretcher bond and to be supplied by Marshalls or equivalent to be agreed by Project manager.

Shared Surface Access Road

236 Shared Surface Access Road to be formed from Keyblok® 200 x 100 x 60mm pavers in Bracken to be laid according to manufacturers specification.

Paving and Patios

237 Paving and Patio areas to be laid with Indian Paving slabs in buff in single sizes of: 900 x 600 x 20mm; 600 x 600 x 20mm, and to be laid as per manufacturers specifications in areas indicated on Hard Landscaping plans.

Internal Fences

238 Siberian Larch fencing battens 45 x 20mm section size to be pre-drilled and screwed through the face with two staggered fixings across the face for all boards to 95mm squared Siberian Larch posts and erected according to manufacturer's standards. High grade Stainless steel screws should be used such as Spax façade screws in minimum 45mm length. Battens to be screwed to both faces of the fence with alternate 45mm gaps between the 45mm battens.

239 125mm high square holes to be provided at ground level, at 5 m intervals, to allow movement of wildlife, such as hedgehog and reptiles, around the site.

Retaining Brick Wall at Entrance

240 Retaining Brick Wall at Entrance 600mm high brick wall to be built with Flemish bond pattern and brick on edge top using Ibstock Birtley Dark Buff bricks or equivalent and following manufacturers standards set out in manufacturers technical information sheet setting out Design & specification considerations.

Illuminated Timber bollards

241 Illuminated timber bollard - such as GCG75 Gywn Carless Designs 145mm x 96mm x height 1200mm.

242 To be installed as per manufacturers instructions in areas indicated on hard landscaping plan.

Brick Pier and low wall fence

243 300mm high Brick Wall between Entrance hedge and garden of House One and the edge of the communal area to be built with Flemish bond pattern and brick piers (with brick-on-edge capping) to give overall height of 1m 80cm at 1m50cm centres using Ibstock Birtley Dark Buff bricks or equivalent and following manufacturers standards set out in manufacturers technical information sheet setting out Design & specification considerations.

244 Set within the piers and attached to the piers Siberian Larch fencing posts - 95mm squared Siberian Larch posts to be erected according to manufacturer's standards with battens 45 x 20mm section size to be pre-drilled and screwed through the face with two staggered fixings across the face for all boards to. High grade Stainless steel screws should be used such as Spax façade screws in minimum 45mm length. Battens to be screwed to both faces of the fence with alternate 45mm gaps between the 45mm battens.

Buildings and fixed Structures:

245 300mm wide grip with concrete kerb path edging solid or loose fill material (proposals to Project Manager) to depth of 100mm.

Seating

246 **Marchsalls Link Picnic seating** to be installed as per manufacturer's instructions in area indicated on hard landscaping plan.

Grasscrete type cellular grass growing systems for communal area:

247 Submit details of system for approval by Project Manager details to include: installation method statement, maintenance, on site protection proposals until establishment. Where the system allows it is

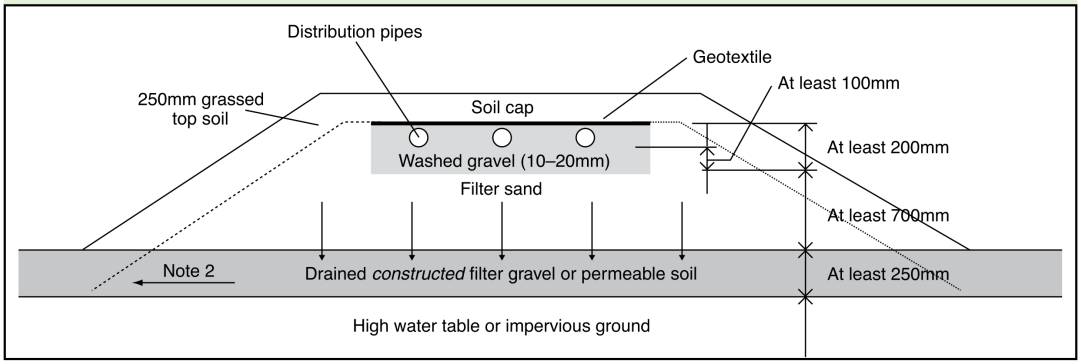
to be installed ready filled with growing grass. Where filled on site representative sample of materials to Project Manager and notification at each stage of installation.

Drainage mound Design:

248 To be designed and installed following specification set out in the Building Regulations 2010 Drainage and Waste Disposal Regulations, section H2.

Figure 2: Drainage Mound Design

Diagram 2 **Drainage mound**



Notes:

1. To provide venting of the filter, the upstream ends of the distribution pipes may be extended vertically above mound level and capped with a cowl or grille.
2. Surface water runoff and uncontaminated seepage from the surrounding soil may be cut off by shallow interceptor drains and diverted away from the mound. There must be no seepage of wastewater to such an interceptor drain.
3. Where the permeable soil is slow draining and overlaid on an impervious layer, the mound filter system should be constructed on a gently sloping site.

HEDGE TRANSLOCATION METHOD STATEMENT

Introduction and Background to Document

249 The front hedge to the site is to be translocated to facilitate the positioning of the new access.

250 Established hedges, including their species-rich vegetation are valuable wildlife habitats and it can take years for newly created, planted and sown habitats to attain the same degree of maturity and complexity as existing features. Therefore, there is a strong landscape and ecological case for translocating the existing hedges across the site, rather than removing and starting again from scratch. In addition, translocation ensures that native species of local provenance are used rather than imported plants.

251 Translocating mature and complex habitats provides landscape structure, visual screening and habitat diversity more quickly than habitat creation using seeds or nursery grown materials. Retaining features within a site, even in a different location, keeps their ecological functions, such as corridors for wildlife to move along and to provide connections between habitats.

252 In carbon terms, translocating features such as hedges within a site may be more environmentally sustainable and have a smaller overall carbon footprint than planting a replacement hedge using nursery grown trees and shrubs together with protective rabbit guards and stock-proof fencing.

253 A further driver for salvage translocation is the ecosystem services provided by wildlife habitats – such as flood mitigation, noise reduction, air quality improvement and visual screening.

Translocation Methods and Options

254 Smaller scale translocation can be used to move ecologically important habitats, such as hedges. The likelihood of a successful outcome and the risk of failure are significantly influenced by the translocation methodology.

Engineering and Ecological Skills

255 Engineering and Ecological Skills are required in the preparation of the receptor site, such that its landform and environmental characteristics match those of the donor site in terms of aspect, slope, soil characteristics (especially pH and nutrients) and hydrology. In this scenario the hedge is being pushed back into the field on each side of the proposed access entrance and therefore there are no donor site incompatibility issues.

256 The plant and machinery needs to be appropriate for the habitats being moved. For example, using low ground pressure tyres or tracked machinery to avoid soil compaction, and using large buckets to maximise the length, width and thickness of turves so that disruption to the vegetation is minimised.

257 Habitats are best translocated in the autumn when the soils are warm and moist and new root growth is possible before winter. Translocation in spring has a greater risk of failure as the roots may not develop before the stresses of summer; translocation in summer is very risky because the vegetation will have the greatest demand for water at a time when the supply of rainwater is lowest and the root system has been disrupted.

258 Following translocation, the hedges will require appropriate after-care similar to that required for newly created habitats and landscapes (e.g. cutting grasslands, trimming hedges, watering in dry weather) and monitoring to assess success and determine what, if any, remedial treatment may be required.

Method Statement

259 Approximately 20m of hedgerow, within the footprint of the proposed development for the site, was assessed in the application supporting documentation as being of landscape value.

260 It is known that the hedge forms part of the hedgerow network in the area. This section of hedge cannot be retained in situ because of the need to open the site entrance to facilitate the development of the site. The proposal is to translocate the necessary hedge sections as part of the earthworks programme, thus maintaining the existing ecological and landscape value of the established hedge.

Method

261 The hedge is already flailed and the current height of the woody vegetation is low, below 300 – 500mm, and below the heights required for bird nesting.

262 The translocation will be undertaken at the start of the earthworks programme.

263 A trench will be dug behind the existing hedge location, where the final site of the hedge sections will be immediately prior to the hedge translocation to prevent the receptor trench drying out.

264 The base of the receptor trench will be scarified and slow-release fertilizer (20:4:10 N:P:K with mycorrhizal additive) and water-retaining gel will be spread along the trench.

265 The hedgerow will be dug out in sections (approx 1.5m width x 1m length) across the line of the hedge to a depth of at least 1m using a tracked excavator with the largest ditching bucket available. During the excavation, a chainsaw will be required to be used to free roots and branches where necessary to prevent them being torn.

266 Sections of hedge with thick horizontal stems will be moved without severing the stems and transported immediately to the receptor trench before the next section of hedge is excavated. These hedge sections will be placed in the receptor trench in the order in which they were removed and soil used to backfill any voids and gaps.

267 Subsequent watering during the autumn will be undertaken in dry conditions.

Monitoring

268 Monitoring will be undertaken in May and July of the following two years to assess the abundance of new growth within the translocated hedgerow.

269 Any areas showing die-back will be replaced with whips for up to 5 years after translocation to ensure the long-term re-establishment of the hedge.

Anne Priscott (CMLI)
March 2021

Further Reading and References

Plant sizes and specification BS 3936 Part I 1992

Choice of species Trees and Shrubs for Landscape Planting (JCLI Recommended Plant List)

Contracts for CPSE Recommended Standard Form of Tender for the Plant Supply Supply and Delivery of Plants

Statutory Regulations Plant Health (Great Britain) Order 1993

EEC Forest Reproductive Material Regulations 1977

Arboriculture Research Notes

No. 97-91-ARB Amenity Tree Planting with Bare-Root Stock

8-79-ARB Damage to Broadleaved Seedlings by Desiccation 75-88-ARB Alginure Root Dip and tree Establishment

64-86-SILN Rough Handling Reduces the Viability of Planting Stock 98-91-ARB Cell Grown Broadleaved Stock

110-87-SILN The use of Co-extruded Polythene Bags for Handling Bare-Rooted Planting

Forestry Commission Publications

Research Information Electrolyte leakage tests as an indication of plant vitality Note 210

Bulletin 111 Forestry Nursery Practice

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