

of 1:5 (20%) are provided to all slopes facing any adopted highway or any mounding where Title Transfer is to be sought.

- 8.16. Relevant British Standards and Codes of Practice must be adhered when designing hard landscape schemes. Further information on these issues is provided in *Design Guide and Specification for Residential and Industrial Estate Development Current Edition*. This is particularly relevant if works are to be adopted by the Council under S38 of the Highway Act 1980.

Soft Landscape

- 8.17. The council have particular requirements regarding the selection of planting in the Borough and the developer should consult Appendix 2 'Planting within the Stockton Borough - Shrubs for use in landscape projects' when preparing any planting plans. All planting should be in accordance with the latest service drawings to ensure the planting is feasible and sustainable. For any open space that is to be transferred to the Council under title transfer the *Detailed Guidance Notes for Open Space to be Transferred to the Council for Future Maintenance* should be followed.
- 8.18. Relevant British Standards and Codes of Practice must be adhered when designing soft landscape schemes and particular attention is drawn to the following standards:
- B.S 3882:2007 Specification for Topsoil
 - B.S 4428:1989 Code of Practice for General Landscape Operations
 - BS 3936:2007 Nursery Stock –Various
 - BS 3969:1998 Recommendations for Turf for General Purposes
 - BS 5837: Trees in Relation to Construction 2005 – The developer is encouraged to make particular reference to sections 13, 14 & 15 before submitting tree planting proposals and these include Design considerations for new planting'; 'Ground works and Preparation for new planting'; and 'Post development management'.
 - NJUG Volume 4 Guidelines For the Planning, Installation And Maintenance Of Utility Apparatus In Proximity To Trees (Issue 2) – Operatives Handbook 19th November 2007 -Tree planting schemes should also adhere to recommended best practices adjacent to utilities.
- 8.19. For further information on retention and protection of existing trees the developer should consult Appendix 3 'Tree Protection'.

Tree Planting

- 8.20. The Council will be closely guided by the technical information within the above documents and up to date best practices. In general, the Council will welcome high quality tree planting schemes that can be successfully established, are sustainable, and that will provide long term amenity benefits to the completed development project. Where trees can be integrated into a development, modern techniques should be incorporated into planting

specifications to provide optimal growing conditions for new trees and to prevent future conflict with surrounding surfacing and associated structures. This may include, for example, use of irrigation systems, structural cells, root deflectors and continuous tree pits (trenches) under hard surfaced areas.

- 8.21. Tree planting particularly in the street scene will help to soften a development and the document *Manual for Streets* by the Department for Transport www.dft.gov.uk/pgr/sustainable/manforstreets should be consulted in order to achieve high quality planting within a development. For any open space that is to be transferred to the Council under title transfer the *Detailed Guidance Notes for Open Space to be Transferred to the Council for Future Maintenance* should be followed.
- 8.22. Positions of proposed trees shall be shown accurately on the landscape plan, noting the species, size and type of planting stock, e.g. Beech (*Fagus sylvatica*), rootballed Extra Heavy Standard 14-16cm girth. Advanced nursery stock is preferred for ornamental tree planting and will be essential in urban areas where there is a potential risk of vandalism.
- 8.23. A tree planting specification must be provided for all trees to be planted and should provide full details of materials to be used, including any methods of tree protection, e.g. mesh cages, guards, furniture. Appendix 4 'Tree Planting Specifications for Softscape Areas' provides a minimum standard that should be adhered to when planting standard and semi mature trees.
- 8.24. New residential development should include trees within the site at a ratio of at least 1 tree per 4 dwellings in addition to any open space or play area provision.
- 8.25. Species shall be selected appropriate to location with due consideration to their ultimate size, growth characteristics, how they may interact with their surroundings in future and possible maintenance requirements: the use of larger specimen trees in favour of smaller varieties will be encouraged where possible to optimise amenity benefits and to provide trees of greater stature in the long term – adequate space, above and below ground, for trees should be assigned accordingly. Building lines, foundations and root barriers must be considered to accommodate larger tree species where applicable. All tree planting should be in accordance with latest service plans in order to avoid major service routes and planting should be designed so as not to create future conflict with street lighting.
- 8.26. For structure planting (woodland) the trees will normally be planted as whips or transplants, preferably cell grown. Young trees must be protected from trampling, grazing and mammal damage. Planting density or spacing of any structure planting should be indicated on the landscape plan with full details of species mixes and stock sizes.



Shrubs And Whips

- 8.27. Planting beds shall be outlined clearly .The stock size, type and density of planting should be stated in a schedule (given as the species and number of plants per square metre). The association of one plant species to another will generally not be required at the application stage providing sufficient space is identified for the proposed planting. However, where these details are not provided a condition will be attached to any planning consent stating that a detailed landscaping scheme (showing individual plant associations) has to be submitted and approved in writing by the LPA before development commences on site. As a general rule the following plant sizes and densities shall be used;

Size (Height)	Number per m2	Planting Distances (Centres)
60 - 90cm	3	60cm
45 – 60cm	4	50cm
Under 45cm	7	40cm

- 8.28. Consideration could be given to planting specimen shrubs of 7 or 15 Litre container size to give an immediate impact. In these instances planting densities can be reduced.
- 8.29. Shrubs likely to reach a height of more than 60cm shall not be planted within highway visibility splays at road junctions. Further guidance on visibility splays can be found in Design Guide and Specification for Residential Industrial Estate Development Current Edition. Care should also be taken to avoid species that may trap litter, which could lead to pest control problems. All shrubs should be planted in beds formed with a minimum depth of 400mm topsoil.



Grassed Areas

- 8.30. The grass-seed mix and rate of application shall be stated. A 'low maintenance' mix is strongly recommended particularly if the scheme is adopted by the Council. Small, awkwardly shaped areas or slopes steeper than 20% are difficult to mow and shrubs are often a better form of ground cover in these places.

Landscaping on Highway Verges

- 8.31. The Council as Highway Authority will consider tree and shrub planting within the highway verge but this will be subject to a commuted sum as detailed in Appendix 5 'Street Trees Formula for Contributions'.
- 8.32. Further information on the adoption of trees and shrub planting on highway land is contained in the highway guidance *Design Guide and Specification: Residential and Industrial Estate Development Current Edition*.

LANDSCAPE MAINTENANCE AND MANAGEMENT PLANS

- 8.33. New landscaping must be adequately maintained in order to promote establishment and the Developer must therefore provide details on how the aftercare operations are to be undertaken.

Soft Landscape

- 8.34. Where required a soft landscape management plan including long term design objectives, management responsibilities and maintenance schedules for all landscape areas/ retained vegetation, other than small privately owned domestic gardens, shall be submitted to and approved in writing by the Local Planning Authority prior to the occupation of the development or approved phases. Hedgerow management plans should be submitted for the restoration of neglected hedgerows utilising approved hedgerow management techniques and all hedgerow maintenance.
- 8.35. Maintenance shall be detailed for a minimum of 5 years from date of completion of the total scheme regardless of any phased development. Any vegetation within a period of 5 years from the date of completion of the total works that is dying, damaged, diseased or in the opinion of the LPA is failing to thrive shall be replaced by the same species of a size at least equal to that of the adjacent successful planting in the next planting season unless the Local Planning Authority gives written consent to any variation.
- 8.36. On larger schemes landscape maintenance shall be detailed for the initial 5-year establishment period followed by a long-term management plan for a period of 25 years. The landscape management plan shall be carried out as approved.



Privately Owned Sites

- 8.37. Where the future maintenance of a landscaping scheme is to remain the responsibility of the developer or a private management company or trust, a management plan must be submitted for approval as part of the planning process. These plans must show that the maintenance and management of the site landscaping will carry on in perpetuity. The council may seek to guarantee this by a planning condition or by entering into a Section 106 Agreement with the developer or landowner.

Sites to be Title Transferred to Council or Sites in Council Ownership

- 8.38. If the developer considers that part of the Landscape in their development needs to be title transferred to the council discussions regarding this must be implemented at a very early stage in the planning application process (this process differs from highway land which is adopted by the authority – see Appendix 5 ‘Street trees formula for contributions’). To this effect the developer must consult the document entitled *Detailed Guidance Notes for Open Space to be Transferred to the Council for Future Maintenance* available from Countryside and Greenspace at Stockton Borough Council.

9. APPENDIX 1: CHARGES FOR OPEN SPACE AND RECREATION PROVISION

STANDARD CHARGES

- 9.1. The table below shows the cost of providing different types of open space and built sports facilities. The costs are shown per person and are based on the amount of provision outlined in the quantity standards. These costs will be updated annually at the start of the financial year in line with RPI inflation as calculated by the Office of National Statistics.

Table Showing the Breakdown of Costs for Open Space and Recreation Provision

Facility/Space	Establishment costs per person	25 years maintenance costs per person
Parks and gardens	£82.50	£206.20
Natural Greenspace	£78.15	£352.20
Sports Facilities (based on full size pitch)	£220	£228.90
Amenity Greenspace	£96.20	£315.60
Play/young people's facilities	£40	£182.20
Allotments	£144	N/A
Cemeteries	£7.28	N/A
Health and fitness suites	£121.50	N/A
Indoor bowls centre	£10.35	N/A
Indoor Tennis centre	£17.90	N/A
Sports Hall	£421.47	N/A
Swimming Pool	£175.90	N/A
Synthetic Turf Pitch	£27.75	N/A
Ice Rink	£11.09 (refurbishment cost)	N/A
Community Centre/Village Hall	£119.97	N/A

- 9.2. Establishment costs refer to the cost associated with establishing each type of space. The maintenance costs are based on maintenance of that type of space for 25 years. Where space is provided on site the maintenance cost for that type of space is required. The standard charge is based on a combination

of different charges intended to provide a typical example of required provision.

Standard Charge for Open Space

- 9.3. In order to ensure that a standard charge can be requested throughout the Borough and does not have to be recalculated for each development a typical example of required charges has been created.
- 9.4. This typical example has been based on a number of assumptions, namely that amenity greenspace and play facilities are the most likely types of space to be requested on site. This is reflected in the inclusion of the maintenance cost and establishment cost in the charge. A second assumption is that where those types of spaces are required on site, other types of spaces will only be enhanced off site so only half of the establishment cost is included in the charge.
- 9.5. In cases where a development is too small to have any open space on site the whole charge will be required, where space is provided on site that part of the charge will no longer be required. For on site open space the maintenance cost is still required. The break down of costs table above can be used to determine the amount that should be subtracted from the standard charge when a type of space other than amenity greenspace or play facilities is provided onsite.
- 9.6. Although the standard charge is based on the assumptions outlined above, it will be used in a way that best helps us to meet standards in the location of the development rather than to reflect the components of the charge. The standard charge will be requested in line with the number of residents in a development using the occupancy assumptions outlined on page 5.

Standard Charge for Residential Open Space		
Type of space	Charge per person	Components of the charge
Parks	£41.25	Half of establishment cost
Natural greenspace	£39	Half of establishment cost
Sports facilities	£110	Half of establishment cost
Allotments	£72	Half of establishment cost
Play	£222.2	Establishment cost and maintenance cost.
Cemeteries	£7.28	Establishment cost
Amenity Greenspace	£411.80	Establishment and maintenance cost
Total	£903.53	Per Person

Standard Charge for Built Facilities

- 9.7. The standard charge for built sports facilities is designed to reflect that the level of provision in the Borough is good overall and it is generally unlikely that new built facilities will be provided through development. However, enhancement is to be encouraged so the charge is made up of half the establishment charge. Although many sports halls will be refurbished through the Building Schools for the Future Programme, reception areas, which will enable the facility to function as a community facility out of hours, will not be funded. Due to this it is still acceptable to request contributions toward the improvement of sports halls and other school facilities. The standard charge will be requested in line with the number of residents in a development using the occupancy assumptions outlined on page 5.

Standard Charge for Built Facilities		
Facility Type	Charge per person	Components of the charge
Health and fitness suites	£60.75	Half establishment cost
Indoor Bowls Centres	£5.18	Half establishment cost
Indoor Tennis Centres	£8.95	Half establishment cost
Sports Halls	Not Requested*	
Swimming Pools	£87.95	Half establishment cost
Ice Rink	£11.09	Refurbishment cost
Synthetic Turf Pitch	£13.88	Half establishment cost
Community centres	£59.99	Half establishment cost
Total	£247.79	Per person

*Due to the high cost of sports halls this element of the charge has not been requested. Contributions to sports facilities have not been regularly requested before so the level of the charge has been minimised. Although the charge for sports halls has not been requested, the overall charge can still be used for sports halls as suggested above.

Standard Charges for Employment Development

- 9.8. As workers have been shown to have similar open space and built facility requirements as residents, the same standards will be used. However, not all types of open spaces and facilities will be appropriate to employment development so the open space charge required is adjusted to reflect this.
- 9.9. The standard charge for built facilities will be required as usual, minus the amount required for community centres and village halls. However, a different charge for open space using similar assumptions to the residential charge is outlined below for open space. Only Amenity Greenspace, Parks and Sports Facilities have been included as they are the most likely to be used by workers.

Standard Charge for Open Space in Employment Developments		
Type of space	Charge per person	Components of the charge
Parks	£41.25	Half of establishment cost
Sports facilities	£110	Half of establishment cost
Amenity Greenspace	£411.80 (£96.20 where maintenance will not be undertaken by the Council)	Establishment and maintenance cost (just establishment cost where maintenance is not to be undertaken by the Council).
Total	£563.05	Per Person

- 9.10. Contributions are to be spent by the Council to best enable us to meet standards. However, it will be ensured that the built facilities part of the charge is kept separate from the open space charge and that the maintenance charge is kept separately and used in line with the commuted lump sums section of the document in section 7. The standard charge will be requested in line with the number of employees in a development using the population per area assumptions outlined on page 5.

APPENDIX 2 PLANTING WITHIN THE STOCKTON BOROUGH

Shrubs For Use In Landscape Projects

- 1.1 The following points must be considered when designing a planting scheme, particularly where the council is responsible for the long-term maintenance of the scheme:
- In many urban areas planting up to 1.0m high in conjunction with advanced nursery stock trees with a clear stem height up to 1.8m is recommended to maintain sight lines and the perceived safety for pedestrians. It is acceptable to plant larger shrubs as specimens within the lower planting but extensive areas of large or medium sized shrub cover should be avoided. In particular large areas of thorny planting should be avoided to reduce excessive litter collection including food waste than can lead to rodent problems;
 - Shrub beds in excess of 4m width should in general be avoided as they become hard to maintain and can thus cause security problems;
 - Low maintenance planting is favoured and plants that require regular pruning should on the whole be avoided.
- 1.2 In selecting a plant the designer should ensure its planting characteristics are suited to the site characteristics and its use within a scheme. The following lists are a guide to planting within the Borough. Therefore, rather than have a list of plants that would prove prohibitive and too prescriptive, suggestions have been compiled of plants to avoid or use with caution. This will allow the designer more flexibility when it comes to plant combinations and plant choices.
- 1.3 Plants that are not hardy should not be used in planting schemes. The following plants are not fully hardy in this area and will need protection in more exposed areas. They should therefore only be used in sheltered locations where their individual particular growing requirements are met and mass planting is not recommended. This list is not exhaustive and includes at least all plants listed as hardiness 1 and 2 in the guideline hardiness category of the Joint Council for Landscape Industries publication Trees and Shrubs for Landscape Planting available from the Landscape Institute <http://www.landscapeinstitute.org/> (the exceptions are Buddleia Lochinch and Phormium tenax which grow satisfactorily in this borough).
- Abelia species
 - Artemesia grandiflora
 - Brachyglottis -species
 - Camellia species
 - Caryopteris x clandonensis 'Heavenly Blue'
 - Ceanothus species
 - Ceratostigma willmottianum
 - Cistus species
 - Choisya species

- Escallonia species
- Laurus nobilis
- Myrtus communis
- Photinia species
- Physocarpus species
- Prunus laurocerasus 'Zabeliana' and 'Cherry Brandy'
- Rosmarinus species
- Salvia species
- Santolina species
- Tamarix species

1.4 The following plants can create a hazard if planted next to footpaths on account of their thorny characteristics and therefore should not be used in this location

- Genista hispanica
- Pyracantha species
- Rosa species – varieties with a lax or loose upright habit
- Rubus spp
- Ulex species
- Yucca species

1.5 No planting should be placed next to a footpath or other thoroughfare that will need regular pruning to keep the route way safety accessible.

1.6 The following plants are not recommended as they are difficult to prune or respond poorly to pruning and are therefore short lived in many cases

- Cytisus species - not for use in a restricted space
- Genista hispanica - not for use in a restricted space
- Lavertera species
- Lavendula species - treat as a short-lived shrub e.g. on roundabouts where it can be replaced after several years

1.7 The following plants can be problematic when grown on the Clay soils found within the Borough and this applies to most topsoil imported from areas in the northeast around the Borough. If the plants are to be used the quality of the soil should be substantially improved by adding compost and sharp sand and the planting rates (sq m = plants per square metre) should be increased as indicated below.

- Cistus species rate 5/sq m
- Cytisus species 4/sq m
- Euonymus species notably 'Emerald Gold' and 'Emerald gaiety' rate 7sq m
- Lavendula species 6/sq m
- Pervoskii species 4/sq m
- Rosemarinus species 5/sq m

- Skimmia species 4/sq m

- 1.8 Plants requiring ericaceous soils should be avoided except in exceptional circumstances e.g. special beds for acidic plants in for example a raised planter and in such cases the use of peat should be avoided as a means of creating an acidic soil.
- 1.9 In areas of open space which are likely to be used for informal 'kick about' areas plants chosen should be robust, non prickly, tolerant of vandalism, good vandalism recovery and establish quickly, the following species are to be avoided for reasons given:
- Cytisus species -intolerant of vandalism
 - Berberis species -slow to establish
 - Forsythia species -slow to establish
 - Salix species - not suitable near built structures
 - Prunus large varieties. - not suitable near built structures

Herbaceous Perennials For Use in Landscape Projects

- 1.10 Due to their habit of dying back in the winter there is a limited use only for herbaceous planting mainly on areas such as parks, nurseries or school gardens, cemetery gardens and roundabouts where the maintenance is higher and private garden design not maintained by the council. To produce a good quality scheme herbaceous plants should have the following characteristics - low maintenance/long life span/ no need for division/non poisonous / resistant to disease/weed suppressing.

Ornamental Grasses For Use in Landscape Projects

- 1.11 There are a variety of grasses that can be used in a landscape setting but due to their soft nature, like herbaceous perennials these are best used in special situations such as parks, nurseries or school gardens, cemetery gardens and roundabouts and private garden design not maintained by the council.

Bulb Planting

- 1.12 All spring flowering bulbs planted in ornamental grassland must flower no later than the end of April to prevent disruption to the grass-cutting programme. The most suitable flowering bulbs for planting in large drifts in grassed areas are Crocuses and early flowering Narcissus species. Muscari may also be suitable in smaller quantities.
- 1.13 When planting in areas of ornamental grassland the following minimum spacings per square metre must be used:
- Crocus species including large flowering and species varieties 75 per sq m;
 - Larger Narcissus species 30 per sq m recommended species for regularly cut and infrequently cut areas;

- Narcissus miniature species 50 per sq m - recommended varieties for regularly cut grassland or exposed areas are February Gold, February Silver, Jet fire, Peeping Tom and Tete a Tete;
- Muscari species 75 per sq m - a recommended variety for grassland is armeniacum.

1.14 Where contours and space allow planting by machine method is recommended, however, planting by hand, by first lifting the turf and planting the bulbs at required depths beneath and replacing the turf after is still acceptable, especially on embankments.

1.15 Other species of bulbs may be suitable for use in select areas in small drifts such as parks, nurseries, school gardens, and cemetery gardens and for special floral displays such as art works:

- Spring flowering bulbs- Anemone, Chinodoxia, Eranthis hyemalis (Winter Aconite), Galanthus (Snowdrop), Hyacinth, Iris reticulata, Pushkinia;
- Tulipa (Tulip) to be used in bedding schemes only;
- Summer flowering bulbs (not to be planted in ornamental grassland) – Allium giganticum, Crocosmia species, Leucojum, Lilium species.

Trees For Use in Landscape Projects

1.16 The following amenity tree species list has been compiled to provide a quick reference guide of trees suitable for planting as ornamental amenity trees in the built up areas within Stockton Borough. It is a suggested list giving examples from a range of tree genera and is not exhaustive. Many other tree species and cultivated varieties not listed here may be suitable for use provided they are carefully selected following the principles of good landscape design and are compatible with their intended environment.

1.17 The trees listed here are those of favoured ornamental form and character that will potentially provide high amenity value, however, the suitability of individual species will be highly dependent on the conditions and local environment where they are to be planted. The list includes both native (**N**) and non native/ exotic species: Native species should primarily be used in natural green spaces, wildlife corridors and rural countryside areas to help support local biodiversity but can be included in formal urban settings where possible. Non-native or exotic trees should only be used within more 'artificial' urban landscapes such as formal parks and green spaces or built environments where they function primarily as specimen ornamental features.

1.18 Individual tree species will have different ideal growing conditions therefore consideration should be given to physical and environmental factors such as soil type, exposure, site drainage and water requirements, pollution tolerance, light conditions etc.

1.19 Tree selection must also give careful consideration to the ultimate size and spread of trees in relation to the available growing space, the growth habit and

form of the trees, and any associated characteristics of the species (including for example any negative characteristics).

- 1.20 Some trees will be suited for use as individual specimen trees of high ornamental value and some may be suitable for use in large numbers for avenues, groups or simply creating 'green mass' in open spaces where tree cover/landscaping is otherwise absent or minimal.
- 1.21 Trees should be compatible with existing trees as well as each other and new schemes should adhere to principles of good landscape design: tree planting layouts should complement existing buildings, highways, other structures, landscape features etc and be in scale and context with surroundings, present and future.
- 1.22 Numbers of tree species used should be proportionate to the total numbers of trees planted and not overcomplicated by the use of too many species.
- 1.23 New tree planting schemes as well as the placement of single trees in the landscape etc should be 'sustainable' and should represent a long term investment in the urban landscape – ie prospect for long term retention/ensure selected trees are planted where they can grow to full size and maturity and add value to the landscape.
- 1.24 Tree planting specifications are equally important to ensure trees have adequate growing medium to ensure they can mature in their location, receive adequate aftercare and are protected during their establishment phase.

ORNAMENTAL AMENITY TREE PLANTING LIST:

GENUS	SPECIES/CULTIVAR	SIZE/FORM	ATTRIBUTES/CHARACTERISTICS	USE
Acer (Maples)	Platanoides (several available cultivars)	Large/ spreading	Autumn colour /hardy	Parkland/specimen trees/groups/formal avenues
	rubrum	Large/ spreading	Bright red Autumn colour	Parkland/specimen
	saccharum	Large/ spreading	Yellow/ orange autumn colour	Parkland/specimen
	saccharinum	Large/spreading	Ornamental/can be prone to branch failures	Parkland/specimen
	campestre	Large/ spreading	Hardy/ yellow autumn colour	Parkland/specimen
	campestre 'elsrijk'	Medium/upright	Upright version of above	Parkland/specimen
	capillipes	medium	Autumn colour/ornamental	Specimen
	dauidii	medium	Autumn colour/ornamental	Specimen
	X freemanii 'Autumn Blaze'	Medium,/ Large spreading	Dark green leaves bright red Autumn colour, attractive foliage	groups/formal avenues
Aesculus (Chestnuts)	hippocastanum	Large/ spreading	Large flowers (produce conkers!)	Parkland
	Indica	Large/spreading	Ornamental, late ornamental flowers	Parkland/Specimen / formal Avenues
	flava	Large/spreading	Ornamental, yellow flowers	Parkland/Specimen / formal Avenues
Alnus (Alders)	cordata	Large/ tall/upright	Attractive form/foliage/hardy/ wet soils	Parkland/formal avenues/

				groups/specimen
	incana also 'laciniata' or 'aurea'	Large/ tall/upright	Attractive form/foliage/hardy/ wet soils	Groups/parkland
	spaethii	Large/Tall	Attractive form/Foliage/Hardy/vigorous/wet soils	Parkland, avenues/groups/ Specimen
	glutinosa (N)	medium	Tolerant of poor site conditions/attractive outline form	Riverside Habitats /biodiversity
Amelanchier (Serviceberry)	Arborea Robin Hill	Small trees	White Flowers and autumn colour neat form	Specimen/groups /parkland/ open spaces/ verges
	Ballerina			
	lamarckii			
Betula (Birch)	ermanii	Medium/conical, good shape	Ornamental/light shading/autumn colour/attractive columnar habit	Formal avenues, groups, specimen
			Attractive peeling bark white pinkish	Specimen/groups/ ornamental
	(N) (plus cultivars)		Striking white bark	Groups, parkland
	utilis		Striking white bark	Ornamental specimen
	nigra		Often multi-stemmed /wide spreading	Groups parkland open spaces
Claytonia (Arundinaria)	Betulus (N)	Large / dense canopy	Handsome shape/foliage	
Pendula	betulus 'fastigiata' esp 'Frans Fontaine'		Neater upright form of above ('frans fontaine very compact upright tree)	Specimen/group/pa rkland

	japonica		Attractive Foliage/spreading tree	Parkland specimen
Castanea (Sweet Chestnut)	sativa	Large/ spreading	ornamental	Avenues/specimen/ group/ open spaces
Corylus (Turkish Hazel)	columna	Medium/Large / upright conical	Handsome avenue tree, hardy/pollution tolerant	Formal avenues
Crataegus (Flowering Thorns)	Oxycantha 'Paul's Scarlet'	Medium/round	Pink flowers/wildlife,birds etc	Parkland/groups/ specimen
	lavellei	Small-medium/ round	Attractive fruits/foilage	Parkland groups specimen
	X prunifolia	Small spreading	Striking Autumn colour	
Davidia (Hankerchief Tree)	involucrata	Medium/spreadin g	Highly ornamental	Exotic specimen
Fagus (Beech)	Sylvatica (N)	Large /spreading	Autumn colour, handsome tree, heavy shade	Parkland/specimen/ groups/rows/open space
	Sylvatica 'Asplenifolia'	Large / spreading	'Cut leaved' / serrated leaves	Parkland / speciment
	Sylavtica 'Dawyck'	Tall/ columnar	Fastigiate form	Wide verges and specimen / avenue planting
	Var purpurea		Purple, heavy shade, colour fades later in season	Parkland specimen
Fraxinus (Ash)	Excelsior 'jaspidea'	Large /spreading	Golden stems/autumn colour	Parkland/groups/av

				enes/ornamental
	Oxycarpa 'raywood'	Large	Neat form, autumn colour	Parkland/groups/ formal avenues /ornamental
	Excelsior (N)	Large	Native tree	
Eucalyptus (Gums)	niphophila	Large	Evergreen/ handsome foliage, bark – hardier than other gums	Specimen/parkland/ novelty
	gunnii			Specimen/parkland/ novelty
	globulus			Specimen/parkland/ novelty
Ginkgo (Maidenhair tree)	biloba	Large	Handsome foliage	Specimen/parkland/ novelty
Gleditsia (Honey Locust)	triacanthos 'Sunburst'	Medium sized	Yellow foliage with colour retained into summer	General / novelty planting
Juglans (Walnuts)	regia	Large/ spreading	Handsome large tree	Specimen/parkland
	nigra			Specimen/parkland
Ilex aquifolium (Hollies)	Aquifolium (N) (several available cultivars)		Evergreen specimens with berries/variegated ornamental forms	Specimen/Groups/ parkland/ cemeteries
Koelreuteria		Small - medium	Attractive foliage/lantern fruits	Specimen on

paniculata (Pride of India/Golden Rain tree)				sheltered site
Laburnum	X watereri	Small - medium	Yellow flowers	Specimen/Avenues
Liriodendron (Tulip tree)	tulipifera	large	Handsome specimen tree, large flowers, attractive foliage	Specimen, parkland
Liquidambar	Styraciflua	Large, pyramidal crown	Autumn colour, maple like foliage	Street tree, avenue, park planting
	Styraciflua vars. 'Thea'	Large but more conical form	Purple autumn foliage	Street tree, avenue, park planting
Magnolia (several cultivars)	Kobus	Small rounded tree	Hardy, white spring blossom	Parks, verges, suited to horticultural schemes
	Grandiflora	Large rounded tree	Sheltered position profuse blossoms in spring	
Malus (Apples/crabs)	tschonoskii	Small/upright	Rich Autumn colour	Formal avenues
		Small-medium / round spreading	Attractive Flowers/fruits	Group, specimen, parkland
		Small-medium /round spreading	Attractive Flowers/fruits	Group, specimen, parkland
		Small-medium / round	Attractive Flowers/fruits	Group, specimen, parkland
		Small-medium/upright	Attractive Flowers/fruits	Group, specimen, parkland

hupehensis

trilobata

floribunda

		tree		
Metasequoia (Dawn Redwood)	glyptostroboides	Medium-large/upright	Deciduous conifer, wet sites, neat shape	Specimen tree
Morus (Mulberry)	nigra	Small-medium	Spreading with domed crown/edible fruits	specimen
Nothofagus (Southern Beech)	procera	Large/ compact upright	Hardy, neat form	specimen
Paulownia (Fox glove)	tomentosa	Med to Large rounded tree	Large foliage - Sunny sheltered site req'd violet to blue foxglove like flowers in May when established	Specimen
Platanus (Plane)	X acerifolia / hispanica	Large, spreading	Attractive form, foliage, bark, reasonably hardy to drought conditions	Avenues, specimen, open spaces, highways
	Orientalis (+ vars)	Large , spreading	Attractive form, bark and cut foliage reasonably hardy to drought conditions	Avenues, specimen, open spaces
Populus	Tremula (N)	large	Wet sites, wildlife (suckers)	Wet sites
	'robusta' or 'Eugenei'	large	Good form, hardy	Open space, parkland, avenues
	X berolinensis	large	Good form, hardy	Open space, parkland/avenues
	Nigra var italica	Large/ fastigiate	Upright/vigorous	Large avenues, industrial shelterbelts
	canescens		Hardy/vigorous	Double avenues /industrial sites

Prunus (Cherries)	Avium 'plena' (N)	Medium-large	White flowers	Specimen, group
	sargentii	medium	Pink/white flowers autumn colour	Specimen, group
	Padus 'watererii'	medium	Attractive white flowers	Group open spaces
	Umeniko / omineko	medium	White flowers	avenues
	Subhirtella Autumnalis rosea	Small - medium	Winter flowers	Group, open spaces
	Spire'	Small/upright	Pink flowers, fastigate neat compact form	Formal small avenues, car parks
	'accolade'	Medium/spreading	Pink flowers	Specimen, group
Pyrus (Pear)	Calleryana 'chanticleer' or 'Redspire'	medium	White flowers, compact form upright, hardy	Formal avenues
Quercus	Petraea (sessile) (N)	large	Neater form than 'robur', native	Specimen, group, avenue/ parkland
	Robur (common) (N)	Large	Native, wildlife	Specimen, group, parkland
	Rubra (red)	Large/ domed	Autumn colour bright red	Specimen, group, avenue/ parkland
	Frainetto (hungarian)	Large/ domed crown	Large handsome tree	Specimen, group, avenue/ parkland
	Palustris (pin)	Large/ upright	Neat upright form attractive foliage	Specimen, group, avenue/ parkland
	Robur 'fastigiata'	Medium-large	Upright form	Avenue, specimen, groups
Robinia (False Acacia)	pseudoacacia	Medium- large	Ornamental foliage, yellow flowers, hardy can be brittle.	Specimen, parkland
Salix	alba	large	Attractive foliage, wet sites	Parkland, specimen

	Matsudana 'tortuosa'	Medium-large	Corkscrew stems	Specimen, group, parkland tree
	X chrysocoma	Large/weeping	Weeping willow (golden)	specimen
	Pentandra (N)	medium	Glossy leaves	Parks and wetland
Sophora	japonica	Medium- large	Attractive foliage, and outline tree shape	Specimen/ sheltered sites
Sorbus (Rowans/Whitebeam)	Aucuparia (N) 'asplenifolia'	small	Attractive foliage, autumn colour	Small avenues, groups, confined spaces
	Commixta 'embley'	Small-medium	Attractive foliage, autumn colour	Small avenues, groups, confined spaces
	'joseph rock'	small	Attractive foliage, autumn colour	Small avenues, groups, confined spaces
	Aria 'lutescens'	Small-medium	Neat shape, attractive, foliage	Small avenues, groups, confined spaces
	folgneri	Small- medium	Attractive foliage, autumn colour	Small avenues, groups, confined spaces
		Small-medium	Attractive foliage, autumn colour	Small avenues, groups, confined spaces
		medium	Attractive foliage, fruit etc	Avenue, group, open spaces,

				parkland
		medium	Attractive foliage, good form	Parkland, specimen, group, open spaces
		small	Attractive foliage	Parkland, openspaces
Tilia (Limes)	Cordata (plus Green Spire) (N)	large	Attractive foliage, canopy (aphid free)	Parkland, groups, avenues
domestica	tomentosa	Large/ spreading	Attractive foliage, canopy (aphid free)	Parkland, groups, avenues
	mongolica	large	Attractive foliage, canopy (aphid free)	Parkland, groups, avenues
torminalis	petiolaris	large	Attractive foliage, canopy (aphid free)	Parkland, groups, avenues
	Var 'winter orange'	Med – Lge	Oval crown red buds and orange shoots attractive during winter	Verge and avenue schemes
Taxus (Yew)	Baccatta (N)	medium		Cemeteries, parkland
		medium		Cemeteries, Parkland
Ulmus (Elm)	Americana 'Princeton'	Large spreading	Resistant to Dutch Elm disease	Avenue, specimen, parkland planting

'fastigiata'

SPECIMEN CONIFERS & EVERGREEN TREES

Abies procera – noble fir
Abies grandis – grand fir
Abies spectabilis – Himalayan fir
Abies Koreana – Korean Fir
Abies nordmanniana – Nordman Fir (xmas tree)
Auracaria Auracana – monkey Puzzle
Calocedrus decurrens – Incense Cedar
Cedrus Atlantica – Atlas Cedar (green)
Cedrus Atlantica ‘Glauca’ – blue atlas cedar
Cedrus libani – Cedar of Lebanon
Cedrus deodara – Deodar
Chamaecyparis lawsoniana – Lawson cypress (several cultivars available)
Cryptomeria japonica – Japanese Cedar
Cupressus sempervirens – Italian cypress
Juniper communis heibernica – Irish Juniper
Larix deciduas – European Larch
Picea breweriana – Brewer Spruce
Picea engelmannii – Engelmans Spruce
Picea pungens var *glauca* – Blue Spruce
Picea orientalis – Oriental Spruce
Pinus sylvestris – Scots Pine (**N**)
Pinus resinosa – Red Pine
Pinus ponderosa – Ponderosa Pine
Pinus jefferyi – Jeffrey Pine
Pinus peuce – Macedonian pine
Quercus ilex – holm/evergreen oak
Sequoiadendron giganteum – Giant Redwood (Wellingtonia)
Sequoia sempervirens – Coastal Redwood

Taxodium distichum – Swamp cypress
Taxus Baccatta – Yew (**N**)
Taxus baccatta 'fastigiata' – Irish Yew
Thuja plicata – Western Red Cedar
Thuja occidentalis – Northern White Cedar
Tsuga heterophylla – Western Hemlock

TREE PLANTING ON WILDLIFE SITES INCLUDING WILDLIFE CORRIDORS AND RURAL COUNTRYSIDE AREAS

- 1.25 In these areas only native planting should be used and species should be selected from the following list based on the Tees Forest Planting list. Individual species and plant mixes should be selected and designed by assessing any existing, important woodland planting in the area and this particularly applies to areas listed as Local Wildlife Sites.
- 1.26 Wherever possible nursery stock of local provenance should be used. The Forestry Commission can be a useful source of advice and possibly grant aid when planting larger groups of native trees contact www.forestry.gov.uk/england

Tree and Shrub Species Considered Locally Appropriate to the Borough.

Large and Medium- Sized Indigenous Trees

- | | |
|-----------------------|---------------------------|
| • Alder | <i>Alnus glutinosa</i> |
| • Ash | <i>Fraxinus excelsior</i> |
| • Beech | <i>Fagus sylvatica</i> |
| • Birch Downy | <i>Betula pubescens</i> |
| • Birch Silver | <i>Betula pendula</i> |
| • Crab Apple | <i>Malus sylvestris</i> |
| • Field Maple | <i>Acer campestre</i> |
| • Oak Common | <i>Quercus robur</i> |
| • Oak Sessile | <i>Quercus petraea</i> |
| • Rowan | <i>Aucuparia</i> |
| • Small leaved lime | <i>Tilia cordata</i> |
| • Wild Cherry | <i>Prunus avium</i> |
| • Willow Crack | <i>Salix fragilis</i> |
| • Willow Goat | <i>Salix caprea</i> |
| • Willow White Sorbus | <i>alba</i> |

- Wych Elm Ulmus glabra

Small Indigenous Trees and Shrubs

- Blackthorn Prunus spinosa
- Broom Cytisus scoparius
- Elder Sambucus nigra
- Gorse Ulex europaeus
- Hawthorn Crataegus monogyna
- Hazel avellana
- Rose Burnet Rosa pimpinellifolia
- Rose Dog Rosa canina
- Rose Field Rosa arvensis
- Rose Sweet Briar Rosa rubiginosa
- Holly Ilex aquifolium

Corylus

APPENDIX 3 TREE PROTECTION

- 1.1 Planning Conditions and Tree Preservation Orders (TPO'S) will be used to safeguard trees in appropriate cases. Developments that result in unjustified felling or that might cause damage or unreasonable conflict with important trees or woodland is unlikely to receive planning consent.
- 1.2 The British Standard 5837: Trees in Relation to Construction 2005, gives detailed guidance on protection, and will be the main point of reference to the Council when determining applications. Stockton Borough Council will be guided by this document in its assessment of all planning applications and recommends that information be submitted in the format of this document as follows:
- Tree & Land Survey, Sections 4.1 To 4.5;
 - Tree Quality Assessment, Section 4.3;
 - Tree Constraints Plan (TCP), Section 5;
 - Arboricultural Impact Assessment (AIA) Section 6;
 - Arboricultural Method Statement (AMS) Section 7 To 12;
 - Tree Protection Plan (TPP) Section 7 To 12.
- 1.3 Developers need to ensure that experts commissioned to advise on matters of technical content within planning applications, have the appropriate qualifications and experience. Technical information relating to trees should be provided by a suitably qualified person.

Tree and Land Survey

- 1.4 **Land Surveys** (refer to section 4.1): An accurately measured land survey should be undertaken to show all relevant hard and soft landscape features including for example, locations of all existing vegetation, buildings, boundary treatments, levels, service runs, drainage etc.
- 1.5 **Tree Surveys** (refer to section 4.2 to 4.5): Tree surveys should cover all the trees on the site and any significant trees that are located immediately adjacent to the site within 10m of the site boundary.
- 1.6 All trees and vegetation surveyed should be individually numbered and plotted on a site plan showing the full extent of existing canopy spreads.
- 1.7 The tree survey should collect the relevant information specified in the British Standard for all vegetation recorded and should be submitted as an accompanying schedule to the site plan.



Tree Quality Assessment (Refer to Sections 4.3 To 4.5):

- 1.8 Trees should be categorised in accordance with the cascade chart in Table 1. All trees need to be attributed relative values ranging from those trees of high quality and value, to those of low quality and value, in order that informed decisions can be made regarding tree management proposals.
- 1.9 Categories of either A, B, C and R (remove) should be allocated to each tree and colour coded on the accompanying drawings.

Root Protection Areas (RPA's – refer to section 5.2):

- 1.10 Should be calculated and plotted for all trees in category A, B or C. In order to avoid damage to retained trees the root protection area defined under each tree should either be excluded from or otherwise undisturbed by all site development activities. This normally requires protective fencing or specific controlled working methods near trees – see later sections.

Tree Constraints Plan:

- 1.11 The relevant survey information should be made available to the developer's project team who can then logically design the development with reference to the existing tree cover: The preparation of a 'Tree Constraints Plan' can be used as a design tool to illustrate possible constraints in relation to trees with respect to their retention value, current and future size, position, and root protection areas.
- 1.12 With the preparation of a plan it is possible to undertake an effective visual appraisal of the site by helping to define the available space for development and to optimise its use. At this stage and as part of initial design, consideration should be given to assigning space to account for the following:
- Building Footprints, Layout and Orientation;
 - Construction Zones required;
 - Access and Storage areas;
 - Utility installations;

- Tree protection zones;
- Tree Retention, management or removal.

1.13 The British Standard also draws attention to developers to consider possible future effects of trees that may be a constraint in the design phase such as light restriction, and future property maintenance issues.

Arboricultural Impact Assessment (*AIA –refer to section 6*):

1.14 Further to an analysis of the tree constraints plan, an assessment of the probable impact of any proposed development on the trees and of the compatibility of development with existing trees of importance is essential to progress the final design and complete development proposals for submission. There are many design issues to take into consideration to ensure that retained trees and buildings are compatible and that any possible conflicts between the two are resolved through appropriate design and construction methods. It will usually be necessary to evaluate in more detail the possible requirements for tree retention and management following the arboricultural impact assessment and modify development proposals accordingly. Factors that need to be considered should include, for example, the following:

- Tree sizes, positions & future growth;
- Tree protection & management requirements;
- Proximity of trees to buildings, structures and hard surfacing;
- Changes in site levels;
- Changes and types of surfacing to be used;
- Engineering specifications / alternative construction methods near trees;
- Installation and layout of services;
- Demolition of buildings and structures;
- Construction site access;
- Construction site layout inc offices, parking, storage;
- Sunlight and shading;
- Site visibility, sightlines and street lighting.

1.15 Development proposals should be sympathetic to retaining and protecting trees of significant value and adequately controlling all site development activities, for example, no works will be permitted in Root Protection Areas of trees to be retained unless it can be demonstrated they will not be of detriment to the trees' health or will use appropriate 'tree friendly' working methods.



Arboricultural Method Statement (*AMS – Refer To Section 7.1*):

- 1.16 On completion of the Arboricultural Impact assessment, the final design and resultant development proposal must include an ‘Arboricultural Method Statement’ to detail all aspects of tree management and protection and construction methodologies that are required. This should include a Specification for Tree Works and a Tree Protection Plan as outlined below.

Specification for Tree Works:

- 1.17 A full specification for tree works must be given to outline management requirements for all trees, detailing the full nature, extent and reasons for proposed arboricultural operations, for example, crown lifting of tree to 5 metres to clear access. This should include details of all tree works needed to allow construction; works needed to ensure compatibility of trees with the intended site use including any works required purely for ‘arboricultural purposes’.
- 1.18 Where trees require removal for development purposes and no other reason the term ‘for development purposes’ should be stated.
- 1.19 Proposed tree work operations should also be illustrated on a site plan in an appropriate format to assist in the visual appraisal of development proposals, for example, showing trees to be retained and trees to be removed. This can be done, for example, using dotted lines or colour coding to show trees requiring work.

Tree Protection Plan (*TPP – refer to section 7.2*)

- 1.20 Once the layout proposals have been finalised a drawing to show the Tree Protection Plan should be submitted to illustrate the precise location of protective barriers around trees and any other relevant physical protection measures including ground protection. Tree Protection must ensure adequate protection of Root Protection Areas and aerial parts of trees and marked as construction exclusion zones on the site plan.
- 1.21 Details should be provided of the protective measures to be used in the accompanying written method statement but can also be annotated on the Tree Protection Plan where appropriate (refer to section 9 for specific details).
- 1.22 The method statement should include details of all control measures needed to protect trees for the full duration of site development and specify all design and construction methods necessary to ensure long term compatibility of retained trees and new buildings and structures: Where potential impacts cannot be avoided by the design of the scheme, specific measures such as the use of special materials and construction techniques will be required. In many cases the acceptability of the scheme will depend on these measures. The method statement should therefore be reflected elsewhere in the final design and development proposal that is submitted to the Council. Sections 11 and 12 give extensive guidance on preparing an arboricultural method statement addressing some of the main issues as follows:
- Methods for tree protection during demolition;
 - Planning construction operations and supervision;
 - Methods for avoiding tree root damage during construction;
 - Ground Protection i.e. maintaining ground conditions for tree growth;
 - Working within Root Protection Areas;
 - Avoiding damage to structures by trees;
 - Installation of services below and above ground (to be shown on site plan);
 - Foundations within Root Protection Areas;
 - Types of hard surface and their suitability in proximity to trees;
 - Low-invasive vehicular access in proximity to trees;
 - Soft surfaces around trees;
 - Avoidance and remediation of compaction;
 - Design considerations for new planting.
- 1.23 Details in respect of the above should therefore be submitted where necessary to complete the arboricultural method statement for submission to the Council.
- 1.24 Where any of the work is likely to need Highway Authorities or Building Regulation approval, the applicants should consult, and gain approval from, the appropriate authority or the Council's Building Control Team before submitting the application.

APPENDIX 4: TREE PLANTING SPECIFICATION FOR SOFTSCAPE AREAS

- 1.25 Tree planting will normally include light to extra heavy standard trees in the girth range 8-10cm to 16-18cm (2-5m tall trees). Some specific schemes may occasionally require larger trees up to 25cm girth.

PURCHASE OF TREES

- 1.26 Stockton Borough Council can provide a list of approved nurseries to ensure good stock is used (any trees that fail to thrive within the 5 year maintenance period will be replaced at the developers cost).

HANDLING OF TREES

- 1.27 Please ensure all trees are handled carefully at all stages from collection, storage, transporting to planting.

PLANTING METHOD USING TRIPLE STAKING & CAGES:

- 1.28 **All materials to be supplied** including:
- 3no. pointed treated stakes (e.g.1.5m)*
 - Tree ties (tie wrap/belt only no blocks), nails as required.
 - Approved compost (e.g. organic manures)
 - Approved Composted Bark Mulch,
 - Green plastic coated mesh 1.5m, fencing staples as required.

*Where specified, Double stake method using 2 stakes/ no cage may also be used on some sites, with no other difference to the specification.

- 1.29 **Planting pit preparation** to include complete excavation of 1m x 1m x 0.5m pits (1m diameter, 0.5m deep edged circular pits are preferred). Pits must be completely dug out and soil broken up a mixed with new compost: min 80 Litre per pit to be mixed with existing topsoil before being backfilled – no sub soils or turf to be left at the top or placed in contact with tree roots.

TREE PLANTING

- 1.30 Trees must be planted upright at the correct depth to ensure the root collar at the base of the stem is the same as the level in the nursery.

TREE STAKES

- 1.31 Stakes should be positioned outside 'rootball' of the tree and must not damage roots. Stakes should be driven in firmly and be aligned, evenly spaced and upright. Trees stakes should be up to third of stem height of the tree they are supporting.

TREE TIES

- 1.32 Standard tree tie wrap/belt min 25mm to be used to secure tree to each stake at required stem height – no blocks, wires, boards etc to be used

MULCH

- 1.33 Addition of fully composted bark mulch at minimum 50mm depth - do not use fresh woodchip that is uncomposted. Mulch must not cover the base of the tree stems and must be placed to correct depth no less than 0.5m radius around each tree.

TREE PROTECTION

- 1.34 Wire mesh cages should be firmly secured and to an appropriate height leaving a 200mm gap approximately at ground level. The top height of the cage should aim to be approximately 1.7m to adequately protect trees from being snapped and should be positioned and cut as suited to the form and variety of tree – Rolls of mesh to be used must therefore be 1.5m.

TREE WATERING

- 1.35 All trees to be watered in at the time of planting to ensure rootballs are thoroughly soaked in. All trees in 'airpots' or rootballs should be completely soaked to ensure adequate moisture is present inside the rootball or airpot.

AFTERCARE

- 1.36 The contractor is to be responsible for ensuring that all tree stakes, ties and caging is kept secure and tended to as and when noted or instructed, e.g. retying/staking loose stakes/caging.
- 1.37 If trees are found to be leaning these must be repositioned upright - If the rootball has rotated the tree must be lifted and replanted, not simply forced straight with tree ties.
- 1.38 Trees that have been vandalised and excessively damaged and require complete removal must be replaced within 5 year maintenance period.

APPENDIX 5: STREET TREES FORMULA FOR CONTRIBUTIONS

- 1.1 The highway layout embraces design principles which follow the recently released Manual for Streets (MfS). SBC are currently assessing the impact the manual has on its current Highway Guidance (Design Guide and Specification for Residential Industrial Estate Development Current Edition) with the aim of revising our current guidance to take account of current best practice design.
- 1.2 Until our guidance has been revised all current applications that follow MfS principles have to be assessed on a case by case basis.

Trees and Soft Landscaping in Adopted Highway

- 1.3 All highway infrastructure including roads, footways, drainage and verges will generally be adopted on satisfactory completion of the maintenance period without charge. In the case of trees and soft landscaping in excess of the areas of highway grass verge a commuted sum covering maintenance costs over and above those which may normally be encountered will be required.
- 1.4 Activities and costs are based on likely date adoption of Highways which could be within 12 months of completion of development therefore all figures quoted assume that highway planting has received 1 full year's maintenance prior to adoption. Figures to be increased or decreased pro-rata based on date of adoption.

Tree Establishment Maintenance

- 1.5 Costs are based on trees being planted at a stock size of 20 - 25cm girth, Rootballed stock type, triple staked with wire tree guard.
- Watering of individual trees at 15 occasions per season (approx weekly May to August) for the second and third season at £5 per tree per occasion.
 - Mulching of individual trees on 2 occasions per season for 3 seasons at £10 per tree per occasion.
 - Maintenance and removal of stakes and temporary tree guards to trees in grass in year 3 at £15 per tree.

Long Term Management

- 1.6 Following establishment, maintenance inspections of trees on the development site will be necessary at 3 yearly intervals for a 25 year period. Inspections rate for this would be £100 per visit. (Maximum 8 No Visits).
- 1.7 Management including crown lifting and possible 'feathering' of any basal growth, 5 occasions per tree over the 25 year period at a rate of £30 per tree.

Surfaced Tree Pits

- 1.8 Where trees are to be planted in adopted hard surfacing the tree shall be placed in an appropriate tree grill / porous resin surrounds and protected by temporary metal tree guards Detail to be agreed with SBC. Permanent features shall have a minimum design life of 25 years. Should the items have a shorter life expectancy the Council will require commuted lump sums to cover replacement of these features for a 25 year period to ensure that failure of the street furniture does not compromise road safety. This clause shall apply equally to any permanent street furniture which is to be placed in adopted highway. Any temporary features shall be identified together with their maximum duration on site, during which time they shall remain fully functioning and in good condition. A commuted lump sum for removal will be agreed with the SBC.

Shrub Planting

- 1.9 It is assumed for the purposes of this application that no shrubs are to be planted on highway land as any shrub planting on Highway land will be subject to maintenance by the Council and therefore payment for maintenance will be by agreement of commuted lump sums in accordance with Parks and Green Spaces.
- 1.10 Any planting on Highway Verges shall not exceed 60cm in height on maturity and shall be planted in accordance with standard SBC specification (to be provided by SBC as part of the Detailed Planning application consultation process or Reserved Matters Application).

Landscaping Bibliography

Acts of Parliament

- Highways Act 1980
- Wildlife and Countryside Act 1981

Planning policy and regulations

- Guidance on permeable surfacing of front gardens – Environment Agency
- Hedgerow Regulations
- Planning Policy Statement 25 Development and Flood Risk
- NJUG Volume 4 Guidelines For the Planning, Installation And Maintenance Of Utility Apparatus In Proximity To Trees (Issue 2) – Operatives Handbook 19th November 2007

British Standards

- BS5837 Trees in Relation to Construction
- British standard 3998:1989 Tree Work: Recommendations
- B.S 3882:2007 Specification for Topsoil
- B.S 4428:1989 Code of Practice for General Landscape Operations
- BS 3936:2007 Nursery Stock –Various
- BS 3969:1998 Recommendations for Turf for General Purposes

Other publications

- Tree and Shrubs for Landscape Planting – Joint Council for Landscape Industries
- Manuel for Streets – Department for Transport
- Public Space Lessons: adapting public open space to climate change- Commission for Architecture and the Built Environment (CABE)
- Tees Valley Biodiversity Action Plan

Stockton Borough Council publications

- Design Guidance Notes for Installation of New Play Areas
- Detailed Guidance Notes for Open Space to be Transferred to the Council for Future Maintenance
- Design Guide and Specification: Residential and Industrial Estate Development.
- Planning Obligations Supplementary Planning Document

Useful contacts – web sites

Commission for Architecture and the Built Environment www.cabe.org.uk

Department for Transport www.dft.gov.uk

Environment Agency www.environment-agency.gov.uk.

Forestry Commission www.forestry.gov.uk/england

Landscape Institute <http://www.landscapeinstitute.org/>

Tees Valley Wildlife Trust <http://teesvalleybiodiversity.org.uk>

Natural England www.naturalengland.org.uk

Arboricultural Association www.trees.org.uk

International Society Of Arboriculture www.isa-arboriculture.co.uk