Formal consultation draft

Trees and the Public Realm
- a tree strategy for Westminster

Supplementary Planning Document

January 2011

City of Westminster

Document title: Trees and the Public Realm (Formal Consultation Draft)
Version: Public consultation draft
Date: January 2011
Produced by: City of Westminster
City Planning Delivery Unit
City Hall, 64 Victoria Street
London SW1E 6QP
Contact: Rebecca Cloke
email rcloke@westminster.gov.uk
☎ 020 7641 3433 Fax: 020 7641 3050

The cover image was sourced from maps.live.com

CONTENTS

Foreword……..…… …...…..5

1. Introduction……..……7

2. Purpose and Aims……..……..…9

3. The Value of Trees…… ……...11

4. Westminster's Townscape…… ……...15

5. Urban Design Principles……...21

6. Practical Site Considerations…… ……...27

7. Species Selection……..……...35

8. Sustainability Considerations……...41

9. Implementation……..……...50

Appendices

A. Great Trees of London

B. Townscape Areas and Planting Principles

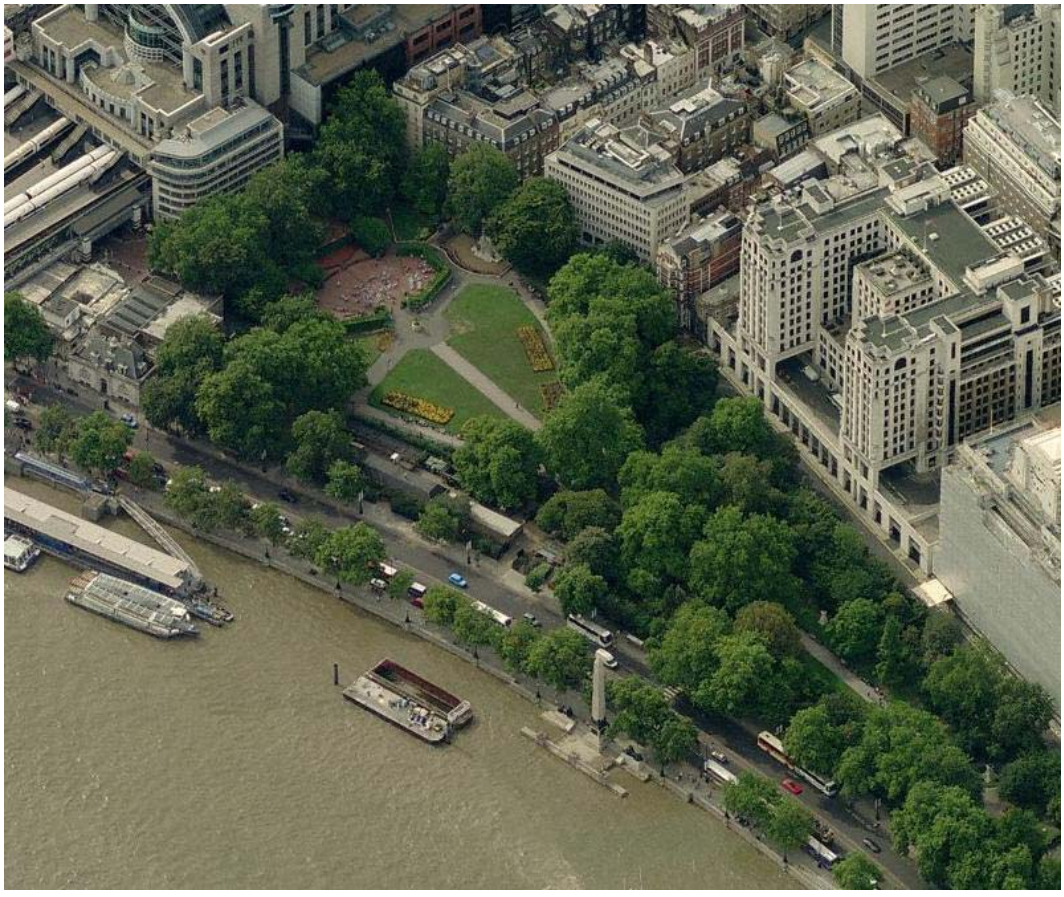
C. Minimum Streetscape Standards for Tree Planting

D. Commonly Used Species in Westminster

E. Policy Framework

F. Trees on Other Sites Which Affect the Public Realm

F. References and Contacts



Victoria Embankment Gardens (sourced from maps.live.com).

Foreword

The City of Westminster lies at the heart of the nation's capital and its trees in the public realm make a significant contribution to London's reputation as one of the world's greenest cities. Beyond aesthetics, trees also make environmental contributions to our city – they sequester carbon dioxide and release oxygen, shade buildings and streets, and provide a psychological link to nature by signifying the change in seasons and the passage of time.

This is a draft Supplementary Planning Document (SPD) that has been developed as part of the council's Local Development Framework (LDF). It is intended to define the council's approach towards the planting of trees in the public realm and seeks to ensure that the city maintains its tree cover and increases it wherever practically possible with due regard to the townscape principles set out in this document . Together with the council's existing guidance 'Trees and Other Planting on Development Sites' these two documents form Westminster's overall Tree Strategy.

This document also establishes the basis for working with partner organisations including Royal Parks Agency, Transport for London, English Heritage, the amenity societies, residents and businesses – all of whom have important roles to play in achieving the council's goal to improve Westminster's environment. Together we will ensure that Westminster's tree stock is planted in accordance with contemporary arboricultural best practice, and with careful consideration of its relationship with townscape, amenity and biodiversity.

Councillor Robert Davis DL
Deputy Leader and Cabinet Member for Built Environment

Paddington and West Marylebone (sourced from maps.live.com).

1. INTRODUCTION

1. Trees were formally introduced into British streets approximately 250 years ago. This is in contrast to a long tradition of urbanisation that started in Westminster in the 6th Century AD. The development of garden squares in the mid 18th century, the subsequent adoption of the French concept of boulevards, the evolution of the arcadian suburb from the 1830s, together with evolving styles and approaches to residential amenity, all emphasised the important role of and desire for trees in Westminster.

2. Trees are therefore now, in most cases, an integral and historic component of Westminster's townscape. Their appearance adds to local character, helping to define a sense of place, and softening the built environment, contributing to our physical, cultural and spiritual well being. Their amenity and biodiversity value together with their positive contribution to many other environmental issues is great. They need to be carefully managed, and new trees planted, to ensure appropriate succession so that future generations can continue to enjoy Westminster's green legacy. Management of the tree stock is key to ensuring that important views are not hidden, to reduce conflicts with pedestrians and vehicles on the highway, and to minimise potential to exacerbate subsidence to buildings. This document, alongside other relevant policy, puts trees and their relationship with Westminster's built environment into context.

The Mall's avenue of London plane trees: The right trees in the right place

3. Westminster City Council currently manages about 15,000 trees (of which approximately 7,500 are street trees), and many more exist in private ownership. Although many of our streets have been planted the council will investigate any new requests for tree planting on public land with a view to increasing the public stock in a coherent way according to the principles set out in this document. We will also

proactively seek to identify suitable new tree planting locations that do not detract from existing amenity, townscape character or would have negative community safety implications. To this end, there has been an identified need to:

- Identify and evaluate the age and species structure of the tree population with a view to strategic renewal programme over the long-term which aims, as a minimum, to maintain current standards of amenity and biodiversity, local and historic character; and
- Increase the number of trees which are healthy and of an appropriate scale for their surroundings whilst maintaining effective footway and carriageway provision.

4. At the same time it should be recognised that Westminster's streets are generally well stocked with trees for a capital City centre, and there are not abundant suitable opportunities for new planting in many areas. Emphasis should be placed on establishing a balanced age structure (which will increase the aesthetic value and longevity of our stock). Whilst native species are generally preferred for their biodiversity value, there is also a more limited range and they are not suitable in many areas.

Tate Britain - Millbank, SW1: Healthy trees of an appropriate scale for their surroundings (sourced from Google Streetview)

2. PURPOSE AND AIMS

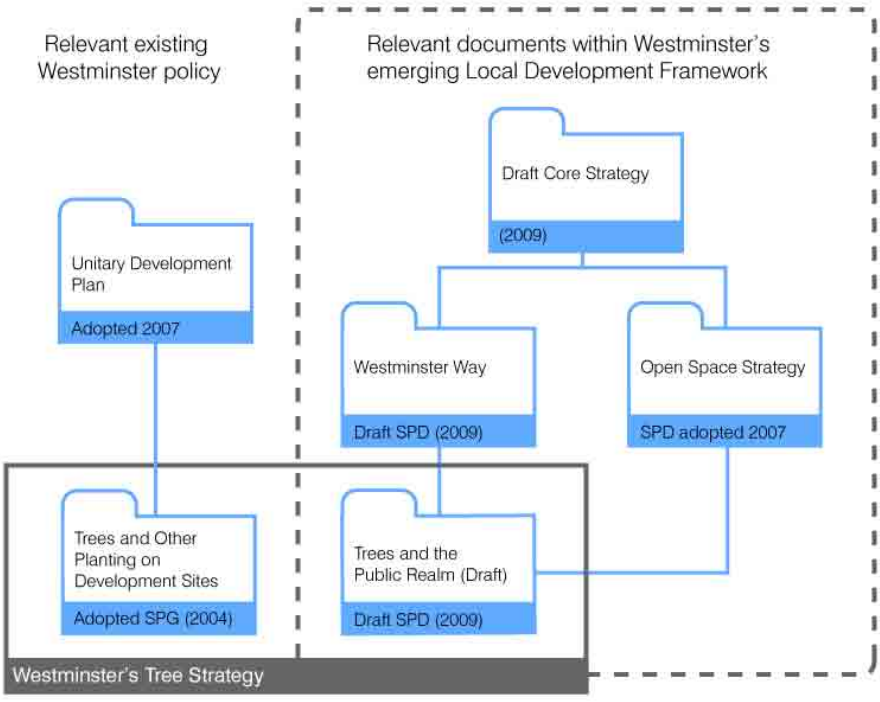
5. This document seeks to ensure that the right trees are planted in the right places. Its purpose can be summarised in the following statement:

> To ensure that, for the benefit of both current and future generations, Westminster's tree stock is planted, and when appropriate replaced, in accordance with contemporary arboricultural best practice, and with careful consideration of its relationship with townscape, amenity , biodiversity and historic character.

6. This document is primarily designed to assist those involved in the introduction and management of trees in the public realm, including:

- City of Westminster as planning, highway, housing and parks authority;
- Transport for London (TfL) as highway authority for the major routes through the city;
- Royal Parks as owner and parks authority; and
- third parties (including major estates) dealing with trees within development schemes or which are part public realm improvements.

7. This document sits alongside the existing Supplementary Planning Guidance (SPG) 'Trees and Other Planting on Development Sites' and together the two documents form Westminster's overall Tree Strategy. The former SPG deals primarily with tree planting in relation to development and, whilst there is some minor overlap between the two, 'Trees and Other Planting on Development Sites' has a clear emphasis on the private context.



8. In contrast to trees on private land which are often governed by requirements for planning permission or Tree Preservation Orders (TPOs), there is little formal regulation applicable to trees in the public realm. The guidance contained within this document is designed to establish a consistent approach across the city and set out in a transparent fashion how decisions over trees are made. Much of this is based on *Westminster Way* – the council's public realm strategy. Whilst the council has limited control over some trees managed by other agencies (for instance those on the Transport for London Road Network or TLRN), it is hoped that this document can help encourage more joined up working.

9. The wider policy context of this document is set out in Appendix E and includes reference to national and regional policies such as *Manual for Streets* and the Disability Discrimination Act, regional advice such as TfL's *Streetscape Guidance 2009* and English Heritage's *Streets for All* and relevant mayoral policy such as *The London Plan* and *The London Tree & Woodland Framework*. We will make informed decisions based on these policies when planting trees in streets, open spaces and other areas which have an impact on the public realm.

   In order to fulfil this purpose, this document has six aims:

   1. To promote an awareness of the value of trees in Westminster;
   2. To provide a practical guide to Westminster's townscape to ensure the continuity of the positive contribution that trees make to its character;
   3. To promote an understanding of urban design principles to ensure that trees are planted in the right places;
   4. To promote an understanding of practical site considerations to ensure that trees are not planted in the wrong places;
   5. To promote an understanding of species selection to ensure that species appropriate to the site are planted; and
   6. To promote sustainable biodiversity goals and contribute to the wider sustainability and climate change agenda.

10. All of these heads of consideration should be taken into account when making planting decisions. Further discussion on each is provided within each of the following six corresponding sections of this report. While some degree of prescription is considered necessary, it intended that guidance provided herein provides the reader with the tools to make an informed decision with regard to what tree is planted where.

11. Lastly, it needs to be noted that this document is not intended to be a manual on tree planting/management practice, nor is it intended to cover the range of issues which often arise over privately-owned trees, particularly those in a domestic setting. This includes the topical issue of subsidence and issuing of TPOs. The Council's arboriculturalists can provide specialist advice on such matters and can be contacted as per the details provided in Appendix F of this document.

.

3. THE VALUE OF TREES

12. Trees in cities provide a range of tangible benefits which have considerable beneficial impacts on the lives of those who live and work in cities but do not have daily access to other more traditional types of open space. There are also a number of less obvious benefits that can sometimes be difficult to quantify, such as social and economic benefits. However, as is emphasised throughout this document, trees cannot be treated in isolation and should be carefully considered in their context.

Environmental benefits

13. Heavy traffic, commercial and domestic heating systems and other background sources all contribute to poor air quality in Westminster. Concentrations of particulate matter and nitrogen dioxide currently exceed air quality standards across the city. Whilst there is still a degree of uncertainty over their interaction with pollution, trees absorb and filter gaseous pollutants (ozone, sulphur dioxide, carbon monoxide, nitrogen dioxide) through their leaves. The physical properties of trees can also have a direct influence on pollution levels in the area they are planted, for instance through acting as windbreaks and reducing dispersion[1].

14. Trees can also have a positive effect on the environment by:

- Cooling the city and benefiting micro-climate and humidity. The shading properties of trees will become increasingly important in light of the trends shown in recent UK climate change predictions.
- Sequestering (or temporarily holding) carbon dioxide, the main greenhouse gas (although, in terms of trees in towns, this role is limited).
- Trapping dust and particulate matters on all aerial parts, which are then washed away by rainfall. Conifers are the most effective in capturing particulates, followed by deciduous trees with coarse, hairy leaves[2].
- Producing oxygen as a bi-product of photosynthesis.
- Potentially reducing localised extremes in temperatures (cooling in the summer, warming in the winter – countering urban heat island effects), although in certain locations they can actually trap heat and reduce breeze.
- Reducing the effects of flash flooding.
- Providing habitats for a broad range of wildlife in their own right, or by contributing to habitat.

---

1 In spite of their absorbing/filtering effects, the presence of trees near roads can sometimes lead to higher concentrations, tipping the scales due to their damping of wind speed. It is therefore important not to allow too much of a 'tunnel' to be created by mature trees along busy roads, and to plant trees with lower foliage density in those locations.

2 Although some trees, like the London Plane, do produce their own 'particulates' at times of the year, which can cause allergic or uncomfortable reactions in some people.

Social benefits – including health and well being

15. The aesthetic value of trees is arguably their most obvious contribution to the city. Trees can be planted to create places and symbolise community focal points, either by acting as physical barriers to movement, visual barriers which create the illusion of space, as navigational aids to direct people, as objects of beauty to attract people. Trees can also be objects of beauty in their own right, simply because their shape is intrinsically pleasing or perhaps because of their particular features of foliage, flowers or bark. It is these qualities that can help to create an attractive and comfortable street that will encourage people to linger and make contact with others.

16. Trees can also assist by:

- Providing historic continuity – trees can live for several centuries and provide an emotional and physical link to past events and planned townscapes.
- Forming an important component of historic designed spaces such as London Squares
- Providing a foil to the built environment by introducing organic shapes and colours into the townscape.
- Marking the changing seasons with leaf changes and floral displays.
- Acting as landmarks when mature, and providing visual emphasis to vehicle and pedestrian routes.
- Screening unsightly views - Even quite small trees planted close to the view point can be used to screen distant undesirable views.
- Giving shade and thereby potentially reducing temperature, and increasing comfort levels.
- Reducing stress and illness by providing psychological refreshment and a sense of well being through softening the built environment, creating character and a sense of place and permanence.
- Releasing scents and aromas that elicit a positive emotional response contributing to health and well being.

Economic benefits

17. Trees can potentially increase property values. They enhance spaces and can provide an attractive environment for business, leisure, tourism and residents, therefore encouraging further investment.

18. Other economic benefits include:

- When planted strategically they can reduce carbon emissions by reducing fuel costs for heating and cooling buildings.
- Providing a sustainable source of compost (leaf litter) and mulch (wood chips).
- Providing employment through all aspects of the arboriculture industry.

19. Trees form part of the City Council's green infrastructure and should be valued as a capital asset.

Significant trees

20. Some trees have been recognised as being of particular value in their own right. *The Great Trees of London* is a scheme promoted by the London Tree Forum which aims to promote trees by letting people know where to find some of the truly outstanding or "Great Trees" in the capital. What makes a tree outstanding might be great age, great size, historical association, interesting shape, rarity and so on. Usually it will be a combination of these factors. Seven Great Trees are located in Westminster and are described in Appendix A.

21. It is large landscape species which often confer some of the greatest benefit to built up areas due to their sheer scale and large tree canopy and will become increasingly more important for the role they play in climate adaption. Managing the health of these existing trees is vital. Subject to the heads of consideration outlined in the following five sections, opportunities should be investigated to encourage more of these significant trees in the city to ensure the succession of Great Trees. Where planting new large trees in a particular location is not possible, though can be given to replacing the tree canopy with a group or series of smaller trees.

Victoria Embankment: Photo of planting scheme, taken 1870-1900 (sourced from English Heritage).

4. WESTMINSTER'S TOWNSCAPE

22. Local distinctiveness and identity has a significant bearing on the suitability of trees. Notwithstanding their significant benefits in cities, trees as a natural element do not always sit easily in a complex urban environment, and require thought and consideration if they are to complement the buildings and survive the harshness of their situation.

23. This section provides an overview of Westminster's varying townscape and sets out how local distinctiveness and identity should be considered when taking planting, succession or maintenance decisions[3].

Varying character

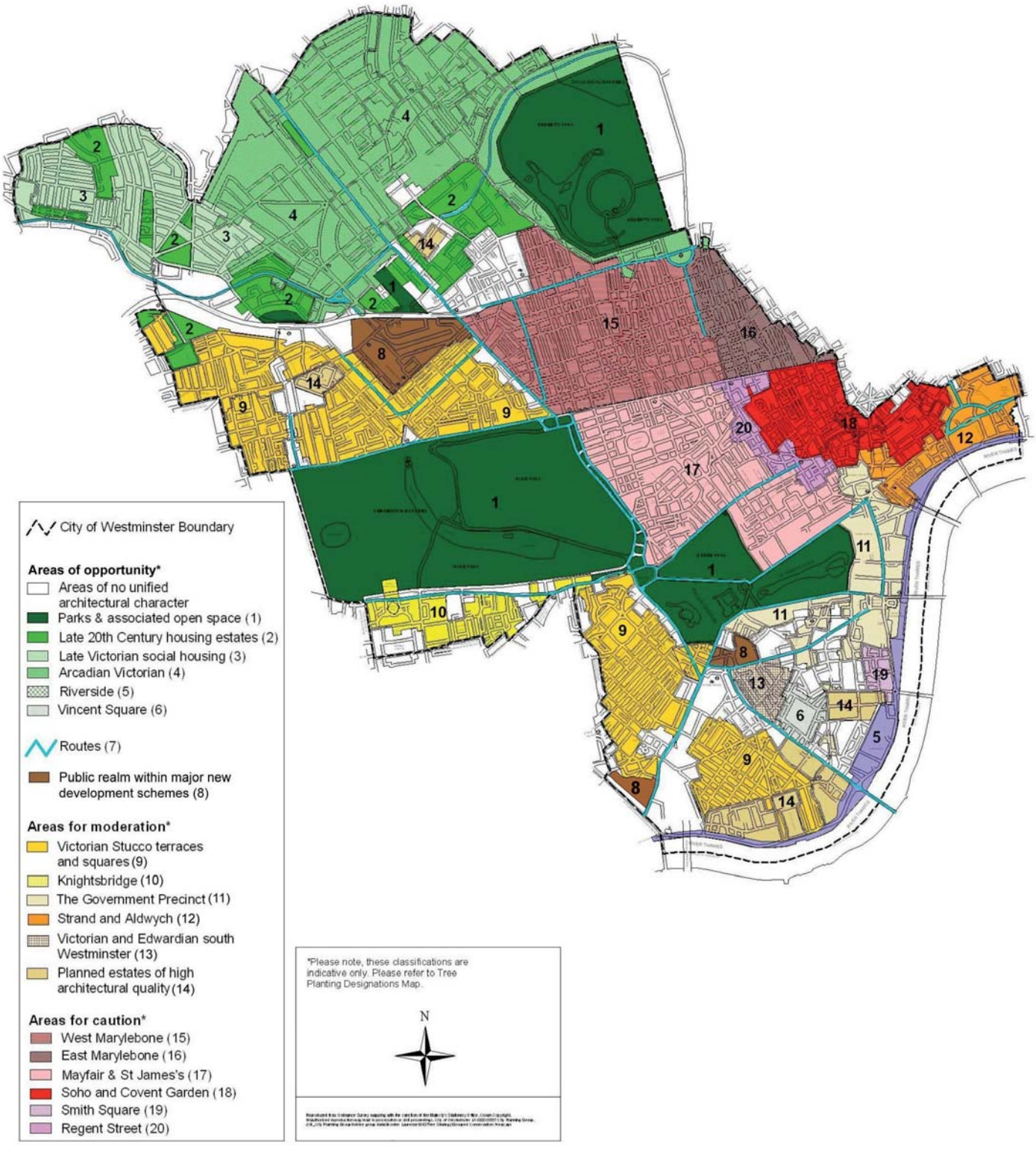
24. The unique character of many areas in Westminster is closely related to the amount, type, distribution and layout of the greenery they contain, and its historic and visual relationship with the built environment. For instance, Westminster has some of the earliest Arcadian suburbs within which tree cover is generally encouraged. At the other end of the scale, Westminster also contains some of the earliest and tightest street patterns where trees may not be as appropriate.

25. 55 areas in the City of Westminster have been designated as conservation areas, covering over 75% of the city's land. These are of very varied age and character, ranging from the historic core of the city around Westminster Abbey and Whitehall, to the oldest surviving residential and commercial properties in Soho; from the expensive residential developments of the eighteenth and nineteenth century in Mayfair and Belgravia, to more modest residential areas such as the Queen's Park Estate of late nineteenth and twentieth century buildings.

26. Conservation areas are defined in the Planning Act 1990 as 'areas of special architectural and historic interest, the character and appearance of which it is desirable to preserve and enhance'. Although conservation areas often include a number of listed buildings, the majority of buildings within them will not be listed. It is the character of the area, rather than individual buildings that the Act seeks to preserve or enhance. Part of that character may well be derived from the area's original masterplan intention, which in some areas means the provision of garden squares to complement the surrounding hard urban townscape. Trees planted on these streets (rather than within the squares) must ensure that they do not materially detract from the character of the conservation area.

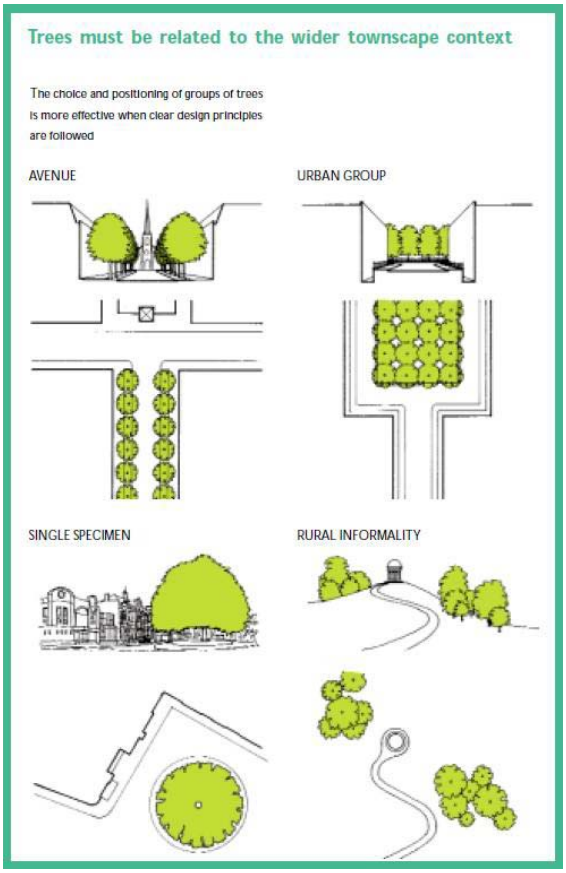
3 It is not within the scope of this guidance to prescribe the long term planting regime for every street in Westminster. Whilst this will help to ensure understanding of the correct principles at the start of the design process, street-specific understanding will be required to ensure the best design solution.

Westminster Townscape Areas



27. In order to identify areas that require similar planting treatment then, this document divides the city into areas of similar townscape character, shown on the plan on the previous page. These townscape areas have been based on existing conservation areas, which have been extended and combined where appropriate.

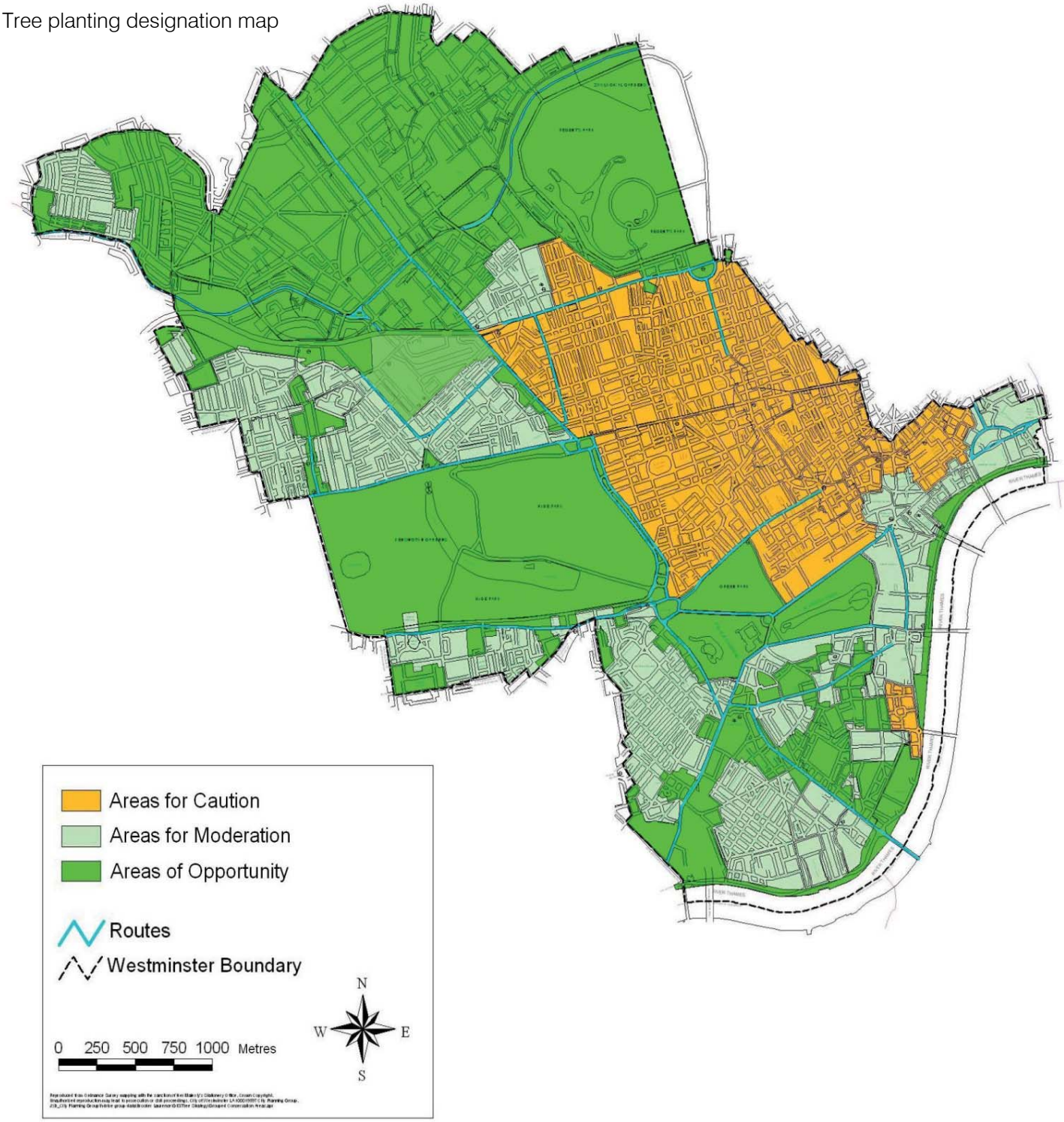
28. Descriptions of each of the townscape areas are provided in Appendix B to help guide a planting that respects its surroundings[4]. Relevant advice in this area comes from English Heritage's 'Streets for All' guidance. In this there is, for example, a strong presumption against planting trees on formal streets of Georgian and Victorian houses if they were never intended to have street trees as part of the original design. They were consciously omitted to give greater effect to the landscaped garden square. This is a good example of why it is important for this guidance to provide an understanding of the historic development of Westminster's townscape, in order to ensure that planting and replacement decisions maintain its integrity and create successful places. While this guidance takes these principles into account it is mindful that many of Westminster's streets have changed over time and now accommodate modern additions to the street scene. As a principle, this document seeks to preserve good historic examples of type where streets have minimal modern interventions and where tree planting was not part of the original design. In other cases where the original historic fabric has been interrupted there is flexibility to consider opportunities for new tree planting where it is part of a coherent design approach. In these cases, each opportunity will be considered on its own merits.



General townscape guidance: Excerpt from English Heritage's *Streets for All: A guide to the management of London's streets* (2000).

4 The special character of each conservation area is described in an audit, either complete or being undertaken, and for further information reference should be made to those documents, which in effect take precedence over the descriptions found in Appendix B.

Tree planting designation map



Note that should a location be suitable for new or replacement trees, consideration then needs to be given to urban design considerations (see Section 5), the space available (see Section 6)) and what species would be appropriate (see Section 7).

29. In addition to the Townscape guidance provided here, trees in the public realm will be assessed during Conservation Area Audits and those that are particularly characterful

(and those that are incongruous) will be identified. Existing street trees that are inappropriate to their townscape context may not be replaced at the end of their life, and in some cases consideration will be given to their removal. Consideration will always be given to replacing any loss in the locality, but it may not be in the same street.

30. Although most street trees have a useful life expectancy of between 40 to 60 years, some species, for example the London Plane, may live for two centuries or more. Exercising the option not to plant is as important as taking the decision to plant in an historic, urban composition.

Tree planting designations

31. Based largely on this assessment of townscape areas, a Tree Planting Designation Map has been developed to provide further guidance on appropriate planting. This map is provided on the previous page and shows:

1. Areas where caution should be exercised in tree planting;
2. Areas where moderation should be exercised in tree planting and management; and
3. Areas where there is opportunity for tree planting.

32. These designations generally reflect the planting constraints in these particular areas rather than providing an indication of how many new trees each area can accommodate. These constraints are determined by the townscape character and disposition and type of underground services and are more prevalent in areas of Caution. Townscape is less of a consideration in areas of Moderation or Opportunity, meaning that there are fewer constraints here to new planting. To be clear, these designations do not prioritise future tree planting programmes, but serve to highlight where there are likely to be more or less opportunities and where additional sensitivity is required.

33. Caution in this context means that there are likely to be fewer suitable locations for new tree planting due to townscape considerations and constraints of underground services, but that where locations are put forward they will be carefully considered on their merits on a case by case basis. However, caution should not be seen as a presumption against new tree planting across the designated area. Opportunities do exist in these areas for tree planting but there are likely to be less of them and a sensitive and coordinated approach needs to be taken where opportunities do exist. Moderation areas already contain a fair number of trees but through self seeding or other planting initiatives they may not always be in the best place. Thus in areas of moderation when trees reach the ends of their lives their positions and species selection may need to be reviewed to achieve a more coordinated approach.

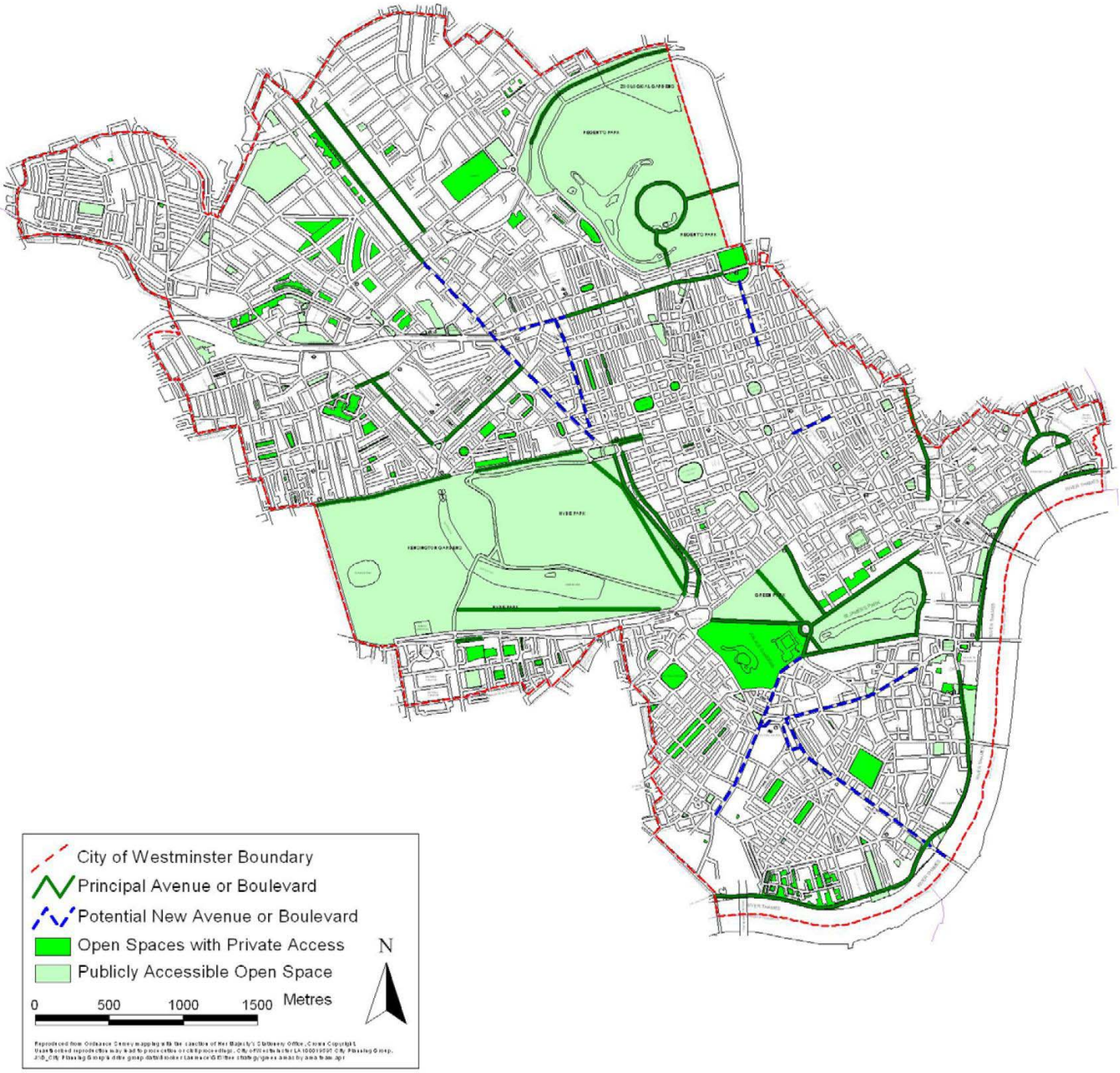
34. It is acknowledged that much of the city's tree stock is located within the Royal Parks which are not directly managed by City Council. Nonetheless, the Royal Parks are included within these designations as they are generally perceived as part of the public realm and in terms of statistics fall within the council's administrative area. Likewise,

many of the key avenues and boulevards are controlled by TfL and are also therefore included.

35. Regardless of access arrangements, private squares, gardens and parks are often highly visible from the public way and have also been included on the map based on their contribution to the public realm. For example, the leafy green gardens of St John's' Wood create a characterful environment that enhances the areas streets and provides visual relief. As part of its commitment to preserve the historic character and appearance of Westminster, the council is mindful of the need to retain this tradition. At the same time we recognise that some flexibility may be necessary in specific cases, if it is evident that the city's overall historic character and general environment will benefit. For example, the removal of individual trees and their replacement with others in more suitable positions may be appropriate, although the council will treat each case on its merits and with due regard to current policy and government guidance.

36. These same principles also apply to trees on other Council landholdings such as within school grounds. These trees provide a valuable natural resource on open space which is often visible by the public, if not always accessible, and that is likely to remain in the council's portfolio in the long term.

Avenues, boulevards and open space in Westminster



5. URBAN DESIGN PRINCIPLES

37. The reason for introducing new planting should be understood in its particular urban context. The presence of trees can have a profound effect on the appearance, character and function of an area. It is therefore essential that new planting should take into consideration the original or proposed design intention and the current use of the location to enable an informed decision.

Soho Square, W1: One of the large planes that give character to the square and its surroundings

38. The following principles provide general advice with regard to site selection. They should be read in conjunction with the information on townscape areas in Section 4, which provides detailed advice on the areas of the city that are distinctive in terms of their coherent architecture, appearance and character.

Composition

39. The overall scene is sometimes referred to a ‘sense of place’ and is meant to encompass all that is seen and felt. Whether planting a single specimen, a group, or an avenue of trees, it is important to consider how they will relate to and affect the surroundings.

40. Trees planted along streets help to define and frame the streetscape giving visual identity and enhancing the street scene. Trees can be used to frame important buildings, or screen less attractive ones, shade footways and enhance biodiversity.

Bayswater Road, W2, and Southwick Street, W2: A dramatic boulevard of plane trees (top); crab apple trees provide interest and a foil to the built environment (bottom).

41. Equally, poorly located trees can obscure buildings of architectural merit, interrupt vistas[5], obstruct the function of the street including movement and street lighting, block daylight and sunlight to residences or in rare cases exacerbate subsistence problems to adjacent buildings. Trees and other planting should always form part of the overall urban context but should not be added or replaced without question.

42. Tree planting should take account of the history, architecture and tradition of places, and is not appropriate in every Westminster street. Trees can in some instances introduce a discordant note into streets where the character is derived from the repetition of architectural features, for example the regular, symmetrical Georgian and Victorian terraces of the Portman Estate and Pimlico, or where trees were never intended to be part of the street scene such as in the narrow 17th Century street patterns of Soho and Covent Garden. The integrity of these places can be easily and

5 See Appendix E for more details of the emerging Westminster policy on views.

incrementally eroded by the introduction of additional features in the streetscape including bus stops, street furniture, as well as trees. It is recognised, however, that the street scene has changed dramatically and a balanced view must be formed for each location on a site by site basis. In some instances the integrity of the historic character should be preserved as far as possible. In other cases, tree planting may be beneficial to the evolving street scene. Each location must be assessed on its own merits.

Lord North Street, SW1: Trees would introduce a discordant element into the regular rhythm of the architecture

43. Some areas of Westminster have received tree planting initiatives in the past that did not take account of their location. The formal squares and private gardens of areas such as Pimlico and Belgravia were conceived as green oases, within the surrounding streets that are flanked by buildings conceived as grand neo-classical 'palazzi' designed to be seen as one architectural composition. It is important to recognise that breaking these vistas with individual or avenues of trees harms this concept and erodes the special character of the place. Without the ability to appreciate these buildings, and therefore these periods of architectural development, London loses some of what makes it unique. As trees require maintenance or replacement, the appropriateness of some earlier planting in such streets will need to be reconsidered on a site by site basis. These are generally the issues in Areas of Moderation.

44. Overall, a balanced view is required and it is recognised that modern Westminster has developed and areas of distinct architectural character may have been interspersed with varying styles of building over time. Whilst those streets that have survived intact should be preserved as fine examples of their type, in other cases incidences may already have disturbed the original historic intention and may not require such a rigid approach. In this way, areas of largely Georgian or Victorian origin, for example, can

offer scope for some street tree planting but these will need to be very carefully considered according to the particular context and with rational composition in mind. Alternative opportunities for greening in these areas should also be considered as outlined in Section 8.

Scale and proportion

45. A 30-metre tall tree is a large object within the townscape (being similar in height to an eight storey building) with the effect compounded if planted in groups or avenues. It is important to therefore consider the effect that the size and number of trees, when fully grown, may have on the surrounding townscape.

46. The height of any immediately adjacent buildings should be a key consideration. This is particularly important in residential streets where trees that over sail the adjacent houses can not only create anxiety for residents, but can also unbalance the overall appearance of the street. Great care and attention to detail has been paid to Westminster's buildings and townscape over many centuries, and trees should complement the buildings fronting our streets and the area generally.

47. There is much more scope for larger trees in parks and gardens. Furthermore, single specimens at junctions, those in squares, or those planted as part of an avenue may serve a purpose in structuring the space or as a landmark and can therefore grow higher than adjoining rooflines. However in both cases care needs to be given to the amount of daylight to nearby habitable windows, and the size of the space available for healthy growth. In areas of high buildings, carefully selected smaller trees can introduce a more human scale.

Ebury Bridge, SW1 (left) and Broad Court, WC2 (right): The trees shown right in Covent Garden are in proportion with the surrounding buildings, in contrast to Ebury Bridge where the tree appears lost at its current size in this arrangement .

Buckingham Gate, SW1: As shown here, single trees can be appropriately sited at junctions, giving more space to grow to natural height, and leaving the buildings along the street unobstructed.

48. The Department for Transport's publication, *Manual for Streets (2007)* provides helpful guidelines on this subject. The public realm is defined by height as well as width – or, more accurately, the ratio of height to width. The height of buildings (or large trees where present in wider streets) is in proportion to the width of the intervening public space to achieve enclosure. The actual ratio depends on the type of street or open space being designed for. This is a fundamental urban design principle – streets with the height: width ratio under 1:1.4 are generally unsuitable for tree planting.

Spacing

49. Strategically located trees can frame desirable views and hide undesirable ones. Equally, poorly-located trees can obscure the view of a desirable subject that is either close to or far away. If planting an avenue consider the vistas created. Strategically located trees can be used to define space without necessarily creating a physical barrier at ground level. Roadside planting marks the boundary between the space for traffic and the footway space for pedestrians.

Paddington Basin, W2: An avenue of regularly spaced trees, used to emphasise the direction of a (shaded) pedestrian route through the development

Timeframes

50. It is important to plant for the long term. Young trees planted in the street can take about a decade to establish themselves and begin to look as though they belong. Whilst smaller standard specimens are more likely to adapt and succeed than semi-mature plantings, they do not give instant results and can be more prone to damage in the early years. The location will determine the most appropriate option.

Victoria Embankment Gardens, WC2: Mature London Planes with a height and wide-spreading form which is compatible with the setting and space. It should be noted that the size of these trees 140years after planting have significantly changed the appearance of the area and mid-range views throughout it.

51. The lifespan of trees varies considerably and many species have shorter than average lifespans in the urban environment. Some like birch and cherry are relatively short-lived, with a typical lifespan of 50 to 80 years. Others, most notably oak and plane, have potential life spans of two centuries or more. Whilst it is possible to remove any tree, it is worth noting that the removal of older and large trees, even for reasons of safety, can be contentious.

52. The age of trees is increasingly of relevance in the preservation of boulevard or avenue planting. Such planting has the best impact when trees are approximately the same size. Conversely, if many trees die in a small space of time then the boulevard effect will be potentially lost for decades. Fortunately, Westminster's stock of mature planes have 50 years or more of life remaining although it is likely that tough decisions on whether to pursue a balanced age structure will need to be made in the future.

53. It is also worth noting that the shape of trees changes over time, depending on species. Young trees often exhibit strong characteristics of "apical dominance", in that they have a central leading shoot and a crown shape that is compact and narrow. As the tree matures the crowns of many species become broader, branches less upright, and wider-spreading with the passage of time. It is therefore important that these changes to shape and size over time, sometimes a very long time, are anticipated and factored into the design requirements and choice of species. Larger species that tolerate pruning are particularly valuable.

6. PRACTICAL SITE CONSIDERATIONS

54. Westminster's public realm is required to support an increasing range of activities and functions, whilst also accommodating an increasing intensity of use. Trees have an integral place within the city's public realm but are not necessarily appropriate in all circumstances.

55. In a park or garden physical constraints may be limited to the presence of other vegetation, proximity of buildings or infrastructure such as lighting columns. The street is a very different environment however, where the safety of users (whether they are in vehicles, on bicycles or pedestrians) is of paramount importance. Constraints include consideration of people with disabilities, pavement width, pedestrian flows, highway traffic, street lighting levels, underground services, natural and CCTV surveillance, need for cleansing and maintenance, potential for property damage, and so on.

56. This section sets out the practical site considerations which need to be factored into the decision whether to plant or not. It includes matters that may affect the safety and/or convenience of the public and relationships to how the street is used.

Available Space

57. Trees should not be planted where they will obscure traffic signs or sight lines, or where they will cause obstruction to the free movement of vehicles. Therefore the planting of small-growing broad-headed trees on busy routes where lateral branches could come into contact with vehicles should be avoided. Care is also needed to ensure larger trees are planted sufficient distance from the kerb to ensure that their trunks (allowing for any incremental growth) and limbs do not become a liability to vehicles or pedestrians.

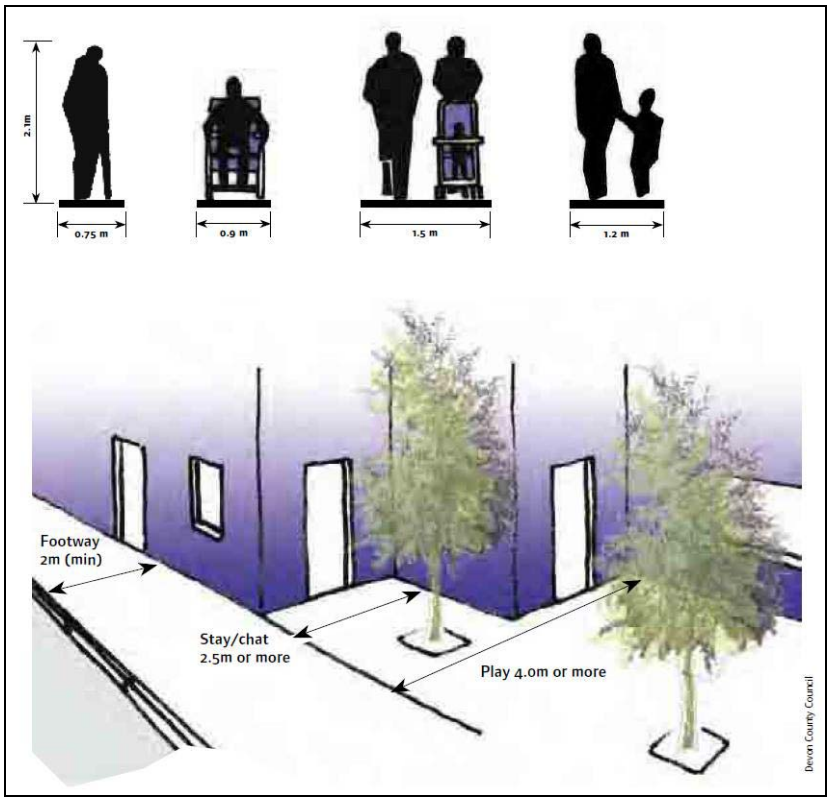
Charing Cross Road, WC2: Trees can cause obstruction and damage to vehicles, particularly buses

58. Generally quieter residential streets have space to accommodate smaller growing species where the presence of parked cars and vans prevents high-sided vehicles from coming close to the kerb. Taller growing species that can be high pruned to provide appropriate clearance over the carriageway should be the preferred choice on busy streets with significant levels of commercial traffic.

59. A thorough assessment of the function of the site, together with detailed knowledge of maximum expected tree size, canopy shape, and form is essential to ensure the correct choices in plant selection. Conversely, where new highway layouts take place, consideration should be given to providing adequate space to plant large growing trees.

Pavement width

60. Is the footway wide enough to accommodate trees? This depends to a degree on how busy the street is. Although the trunk of a tree can take up little more space than a street lamp column, more of the pavement is dedicated to the tree pit, so avoid planting where pavement width is restricted. Consideration should also be given to the potential to cause footway damage.



Space for planting: Excerpt from Department for Transport, Manual for Streets (2007)

61. It is necessary to ensure that there is sufficient pavement width to allow the unimpeded passage of those pushing prams and members of the public confined to wheelchairs or mobility scooters, and for this reason two metres is our normal target width, in accordance with the guidance in *Manual for Streets*, from which the useful illustration above is extracted.

62. It is recognised that narrower historic streets exist in Westminster with corresponding narrow pavements where modern dimensions may not be achievable. Exceptions on such streets are possible, where pedestrian traffic is low, although an absolute minimum footway width of 1 metre must be maintained. The tree pit can be included in this measurement if it is surfaced with resin-bonded gravel which provides a smooth, level (useable) surface. Private land (e.g. pavement lights, or forecourts), often cannot be included in this measurement as permitted development rights can allow the land to be removed from highway use, but in other cases it may have become de facto highway.

63. Streets in retail areas tend to have much higher levels of pedestrian traffic than residential streets. The requirement to maximise unimpeded pavement width is therefore important in these locations. Where it is safe and appropriate to do so, trees should be planted adjacent to the kerb in the zone set aside for lamp columns, traffic signs and other items of street furniture, off the desire and sight lines. Pedestrian dynamics modelling, using a system such as LEGION to illustrate the dynamics at the busiest times, may be the only way of ensuring sufficient space is available for the planting of trees, after an adequate pedestrian clear zone has been established in particularly busy areas (eg. around major railway stations and West End locations).

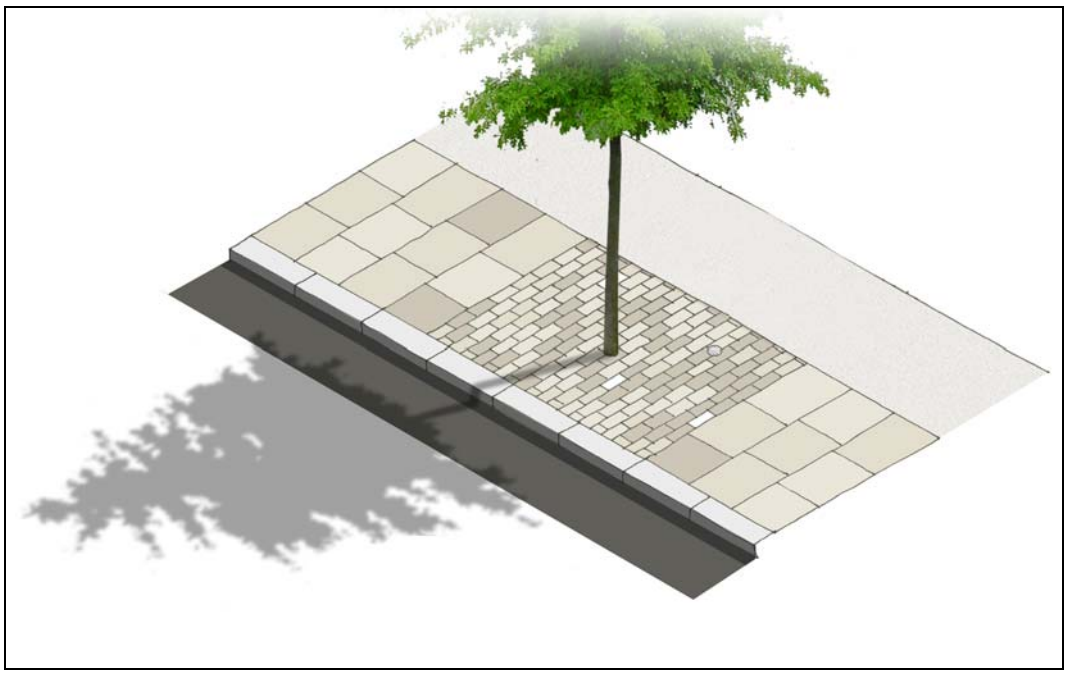
Street furniture

64. Again a thorough assessment of the function of the place is essential before taking the decision to plant a new group of trees. It is important that trees are located appropriately where they will not unduly interfere with the functions of other items of street furniture, particularly those related to safety, such as traffic signs and street lights. Therefore consider the potential for lower branches within the canopy to encroach upon the level of traffic signs. If a potential group of trees is reduced to just one or two through the above considerations and underground utilities, then there is a risk that a tree or two may appear to be random incidents in the townscape. In such cases it may be better not to plant.

65. Trees planted within close proximity to street lights can create areas of shadow and also cause damage to the lighting due to branch movement and residue deposits. As a consequence, it is recommended that trees should be located a minimum of three metres away from street lights. Trees with a canopy that will spread to the column should be located more than three metres away, as appropriate[6]. Canopy density of various species should also be considered: open-canopied trees, such as birch, permit higher levels of light to penetrate the canopy than is the case with a closed canopy tree such as white beam.

6 It is important to understand that the City Council designs lighting systems to reasonably fine tolerances to meet the relevant standards whilst ensuring future energy requirements are inline with Council's carbon reduction commitments. Supplementary lighting, while possible, should be viewed as undesirable due to increased capital/revenue cost, increased energy cost and the increased carbon footprint. It may become necessary for two dimensional lighting and planting plans to have the third dimension shown, in order to predict relationships between trees and lights.

66. It is important to also maintain a general presumption against the use of street tree furniture such as tree guards, unless justified, as this can contribute to unnecessary clutter adjacent to the highway. Where trees are in open spaces this presumption can be reviewed in the particular context.



Where a tree will require a large area of pavement, unpointed setts (preferably tegula but granite is potentially acceptable) can be used.

Closed Circuit Television (CCTV)

67. Many areas are now subject to CCTV coverage, principally to detect and record crime. The location of a new tree must be carefully considered to minimise the creation of 'blank' areas where the cameras cannot see.

68. Usually the problem can be resolved by pruning specific branches, but in rare cases it may be necessary to remove the tree. Where retention is highly desirable additional cameras may be needed to provide the necessary coverage.

Residential amenity – Daylight, sunlight, accessibility

69. The amenity of residents is important when considering where to plant. Consideration will be given to windows to habitable rooms[7] when planting. Mature trees can cast shadows and block considerable amounts of daylight and sunlight, particularly to windows on lower floors and in basements, which can be a problem in lowering the quality of life for some inhabitants.

7 Defined as: Residential living rooms, bedrooms, and kitchens (if they include dining space and are larger than 12.6sqm). Bathrooms, toilets, landings and lobbies are excluded).

70. If possible, locate trees on the boundary line between buildings as this generally avoids planting trees directly outside the windows of habitable rooms in residential buildings. Avoid planting directly outside doors, gates or entrances onto the pavement. Consultation may be appropriate before taking the decision to plant.

Pedestrian safety and amenity – Surfaces, allergies, temperatures

71. The primary purpose of the street should always be borne in mind – to carry pedestrians, vehicles and services safely. Detailing of paving and protection of tree roots should allow for the continued expansion and settlement of ground levels around trees in order to avoid trip hazards in the future.

Pimlico, SW1: Neat, safe, maintainable simplicity is achieved by using resin-bound aggregate.

72. Tree guards and coverings will be regularly reviewed, and other similar products will be trialled and considered. These are noted in the guidance section of *Westminster Way*, but the preferred option in areas of high pedestrian footfall is to use a permeable resin-bound aggregate matching the colour of the adjacent paving, to allow pedestrians to use the space and facilitate efficient street cleaning.

Services

73. While it is less likely that obstructions or services will be encountered in a park than on the highway, any excavation in Westminster should be planned and carried out with caution. A visual appraisal of the site will usually give an indication of what services may lie beneath the surface. But the absence of above ground apparatus must not be taken as evidence that no services are present.

74. On all occasions a trial pit should be dug to ascertain the presence of services or obstructions and records kept of any that are encountered. A viable tree pit should be free from services, and on no account must trees be planted above or adjacent to power cables of any kind or above water mains. This creates the conditions for potentially fatal accidents in the future when the tree may need to be removed.

Vaults and cellars

75. The footways in many streets in the older parts of the city are built over cellars and vaults. These were originally used for storage, of coal in most cases, but they are now used for a variety of purposes, some still for storage, but others are converted for other uses, including bathrooms or air handling plant. These new uses require that the cellar be dry.

76. While the footway is not intended or designed to be watertight, an opening in the pavement for tree pits can increase the amount of water entering the subsoil beneath the pavement and as a consequence may affect any cellars beneath. Lack of suitable depth of soil (and consequently, services close to the surface) often means that it is not physically possible to plant trees in streets underlain by cellars and expect them to remain healthy.

77. Care needs to be exercised in species selection when considering planting in streets underlain with cellars and generally speaking, such planting should be avoided where there is risk.

Growing conditions

78. Lack of suitable soil may limit tree planting opportunities. Successful establishment usually requires that the bottom and sides of the tree pit are in contact with the underlying subsoil. Planting on build outs over unused areas of carriageway normally results in a tree pit where the sides are not soil but concrete and sub-base. In such circumstances a larger tree pit of several cubic metres will be required to provide sufficiently large volume of soil to supply the tree with water and nutrients needed for growth.

79. The ground beneath the pavement is usually highly disturbed. However, good growth can be achieved provided that appropriate species are selected. Climate change predictions are for generally drier and hotter summers, and generally warmer but wetter winters. Higher average summer temperatures increase the rate of transpiration, and combined with lower summer rainfall will place greater drought stress on plants. It will therefore be prudent to plant species that are resistant to extremes in temperature and moisture.

80. Planting in containers should be avoided as climate change will exacerbate the inherent problems of the lack of available moisture in the small soil volumes without artificial, unsustainable irrigation. Tree pits created in paved areas where there is an absence of subsoil must be of sufficient size to provide an adequate reservoir of soil water to cope with anticipated dry periods between rainfall. Unless the tree is irrigated or can tap into a source of water such as leaking pipes, the likelihood of death through the effect of

summer drought is predicted to increase. Former coal vaults can make excellent ready-made planters if they have not been converted into usable space, and only with the consent of the building owner.

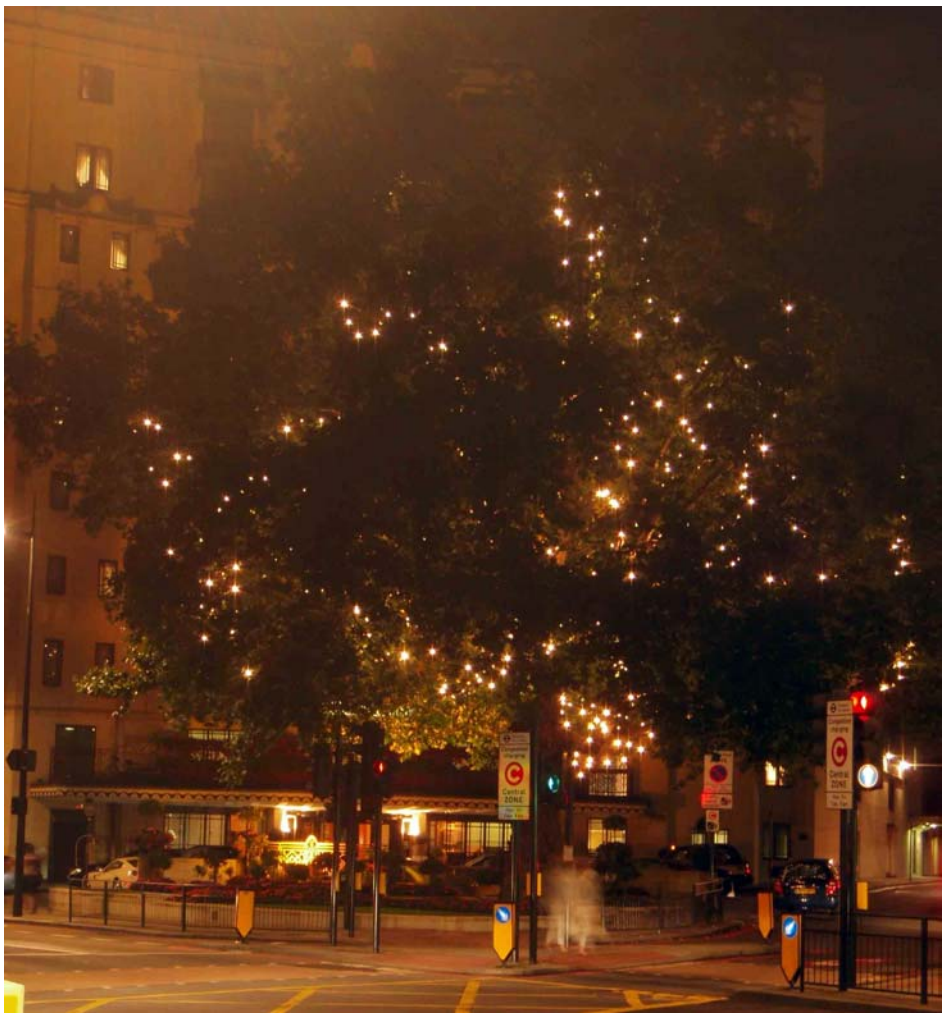
81. Deep shade, cast by a large tall buildings, will not provide optimal growing conditions.

Petty France, SW1: The proximity of trees to buildings needs to be considered. The pavement space available for these new plantings (right) is more suitable than that available for existing trees (left).

Illumination

82. The illumination of trees can help to create drama and a sense of place into the evening – particularly when used seasonally in the winter period. However the decoration of trees with lights can also look untidy and out of place in an historic city, particularly during the daytime. It can also cause problems for the tree's health, particularly if poorly installed. Ecologically, lighting in trees is not advisable as it disturbs the natural cycle for wildlife. In addition, illumination of trees raises sustainability issues due to the consumption of electricity required.

83. As such, illumination should only be used in appropriate locations as an integral part of a purposeful place-making scheme. Care should also be taken to avoid diluting the visual effect of irregular incidences of illumination and excessive light pollution that may result. All proposals to illuminate trees should use more energy-efficient LED sources, light away from the vertical, have timer controls, and the energy and carbon cost should be explicitly stated when a case is made for them. Furthermore, the amount of hardware used should be minimised, it location carefully considerd, invasive fixing techniques should be avoided and the maintenance schedule should be prescribed, costed and funded.



St. James's Park, SW1 (top) and Park Lane, W1 (bottom): Illumination extends the visual contribution of trees into the evening, and can provide a stunning landmark

7. SPECIES SELECTION

84. Urban street trees are generally subject to greater stresses than trees that can grow undisturbed. They are subject to higher summer temperatures, are grown in poor disturbed soils that are contaminated with road salt in the winter, have restricted root runs, are subject to mechanical damage to roots, trunks and branches, and if grown in hard surfaces poor supplies of water. All of these factors shorten the trees' normal expected life span, even given some of Westminster's trees are over 150 years old.

85. This section looks at some of the characteristics that need to be considered when selecting a species to plant. Sufficient quantities of new trees should be planted regularly to ensure that losses in appropriate locations are replaced. Felled trees should also be replaced with another of a suitable species in order to preserve the character of the area, where is it desirable and appropriate to do so with specific regard to streetscape design. More detailed information on tree species which are used in Westminster is provided in Appendix D.

Native vs. non-native species

86. It is most important that tree species are chosen for their adaptability to the prevailing site conditions rather than a strict adherence to the current mantra that only native species will do. If a biologically diverse habitat is the design brief then it will be important to provide the appropriate growing conditions. Parks, cemeteries and housing estates are the sites most likely to provide the space and conditions for the creation of native habitat.

87. Native trees, such as birch and field maple may be suitable for street tree planting, but the choice of native species with suitable characteristics for street tree planting is very limited. Therefore it is likely that a significant proportion of new tree planting will be non-native species.

88. Few evergreen trees are native, and their alien columnar or pyramidal form and minimal contribution to biodiversity make them unsuitable as street trees.

Size

89. Selecting the right size of tree for the site and one that relates to the space in which it is to be planted is essential. This is particularly important in residential areas where trees that tower over and dominate adjacent residential property can create excessive shade, and block street lighting, causing people to feel apprehensive. It is less of a problem where the buildings are in commercial use.

90. The planting of large-growing species in Georgian and Victorian times has caused some problems today. These plantings caused no problems initially, as they were frequently managed by regular pollarding. However, pollarding as a management technique is not ideal for aesthetic reasons, as trees can look unnatural.

91. As a rule of thumb, select the largest tree that the site can accommodate, bearing in mind its size when fully grown. Fortunately nature has provided us with a wide range of tree sizes, from the diminutive snowy mespil which grows to around 8 metres in height, to the stately London plane which can attain heights of 30 metres or more.

92. Site conditions and microclimate[8] affect to a significant degree the rate of growth, ultimate size and to a lesser degree variations in form within the overall shape of the species. Therefore an understanding of site characteristics, (soil type, drainage, shade, temperature, etc) is essential to making an informed choice with regard to species suitability.

Lancaster Terrace, W2: Regardless of its ownership, this tree is somewhat lost in such a large expansive space (sourced from Google Streetview).

93. It may be difficult, in certain conditions to plant a tree of suitable dimensions for the duration of its life. It may be then, that replacement needs to be planned at the time of planting, with the tree never reaching maturity.

Shape (Form)

94. Trees come in all shapes and sizes and therefore the overall size of the tree should be selected to meet the design intentions. The shape of the tree should be considered as well. For ease of categorisation there are four basic tree shapes: round, oval, vase and columnar.

8 A local atmospheric zone where the climate differs from the surrounding area. Trees can have an impact on shade or wind for example.

95. It therefore follows that size and shape should be appropriate for the chosen location. Pillar crab apple is a medium sized tree in terms of height which has a very narrow width to height ratio. Despite its relatively short life, this makes it a good choice for locations where available lateral space is limited. It is quite a good choice in residential streets where the properties have only very shallow front gardens.

Carlton Hill, NW8: The narrow-crown of these pear trees provide a more formal street planting option (sourced from Google Streetview)

96. On the other hand the ornamental privet is not such a wise choice for road side planting. Its broad canopy arises from a graft only about 2 metres above ground level and therefore nearly half of its canopy overhangs the road where it causes a potential obstruction and is at risk of damage from passing vehicles. These can also look somewhat alien in London's streets, where naturally shaped trees predominate.

Park Lane, W1: The London plane tree outside the Dorchester hotel is a large tree that is in scale with the buildings and setting (Sourced from Google Streetview).

97. Where there is greater abundance of space it is important to understand the function, constraints and opportunities of the place, and choose a tree that is of a size and form that complements it. If appropriate a single large, impressive 'landmark tree' can be the preferred option.

Canopy Density

98. Once a tree of appropriate size and canopy shape has been selected there are other characteristics needing consideration such as leaf size and shape, flowering and ornamental bark. Perhaps the most important of these is the density of the canopy or the arrangement of the branches. Broad-canopied trees with low spreading branches will create proportionally larger areas of shadow than will a narrow-crowned tree, which can be a positive characteristic in casting shade in the day.

99. 'Open canopy' trees such as birch and false acacia possess relatively small leaves that are carried on well-spaced branches. The result is a canopy that is partially transparent, allowing dappled light to filter through. They have a lightness about them that, even in large specimens, is not oppressive. 'Closed canopy' trees tend to have closer branching and larger leaves. Trees such as horse chestnut and whitebeam have fully opaque canopies that cast dense shade. They are good for screening but in some environments they can create a somewhat gloomy atmosphere, and can block views and affect the micro-climate.

Blandford Street, W1 (left) and Gloucester Place, W1 (right): The beautiful bark, light and well shaped canopy, and moderate size of the silver birch in Blandford Street makes it an effective street tree whilst the sparser canopy of this particular Gingko is less attractive and does not complement the architecture or streetscape in this instance.

Pests and Disease

100. Well-grown, healthy trees are less susceptible to disease than trees that are in poor health or under stress. The importance of optimising good growing conditions should therefore not be underestimated. Appropriate species selection can help as some species are less prone to pests and disease than others. For example Plane trees are genetically predisposed to resist fungal attack.

Other characteristics

101. Some trees produce large amounts of fruit that would not be tolerable for safety and cleansing reasons if it were allowed to fall onto the public footway. Trees that produce thorns are also not a wise choice for the public footway, for obvious reasons. Fortunately, thornless varieties of most species are usually available.

102. Consider also the propensity of the species to produce seeds or fruits that can for example be poisonous (yew) or aggravate asthma or eye/throat irritation (Plane tree's hairy seeds) or have unpleasant or aggravating smells (female ginkgo).

103. Tree species with well-known propensity for 'brittle branches', (e.g. the golden leaf form of false acacia) should be reserved for sheltered sites. They are unsuitable for planting at the base of tall buildings or where there is a potential wind tunnel effect.

Subsidence

104. Potential subsidence damage to buildings is also a consideration, albeit not always a foreseeable one, in taking planting decisions within the public realm. Existing guidance from both the arboricultural and insurance industries highlights the increasing incidences of subsidence due to climate change irrespective of the presence of trees. Given the technical and site-specific nature of the issue please contact council's arboricultural officers for further information (see contacts in Appendix F).

Fifth Avenue, W10: Plane trees which have been pollarded as they have grown to keep them to a size appropriate to the scale of the street (sourced from Google Streetview)

8. SUSTAINABILITY CONSIDERATIONS

105. In addition to the matters raised already in this document, it is also important to consider the role trees play in the 'green agenda' and the increasingly pressing issue of climate change. Within the City of Westminster there are many areas which have clear deficiencies in open space and greenery, as shown in the map over the page[9]. Whilst some of these areas may not be suitable to accommodate trees, there are a number of opportunities for other interventions throughout the borough to address these sustainability issues.

Biodiversity

106. Native trees are best for biodiversity as they generally support a wider range of species than introduced trees. Large and older trees will support more plant and animal species than small or young trees of the same species. Veteran trees[10] are particularly important for biodiversity as they have the potential for bat and bird roosts owing to cracks and holes that develop in the tree from decay over time.

107. Our parks, open spaces and cemeteries offer the greatest opportunity for the planting of native species, but where possible and without conflict to other design intentions, native trees should also be considered for street tree planting.

Climate Change

108. The maritime climate of the British Isles is historically characterised by the absence of extremes of heat and cold. Our cities therefore have been climatically equitable places in which to live and work. However there is a general consensus amongst experts that temperatures will increase, summers will be hotter and drier, winters will be warmer and wetter, and there will be an increase in the number of storms and floods. Recent reports have recognised the role of trees in combating these trends[11].

109. Trees in enclosed pits may struggle in future to find sufficient water to remain healthy, and certain species, such as beech, birch and ash may not cope well with these climatic changes.

---

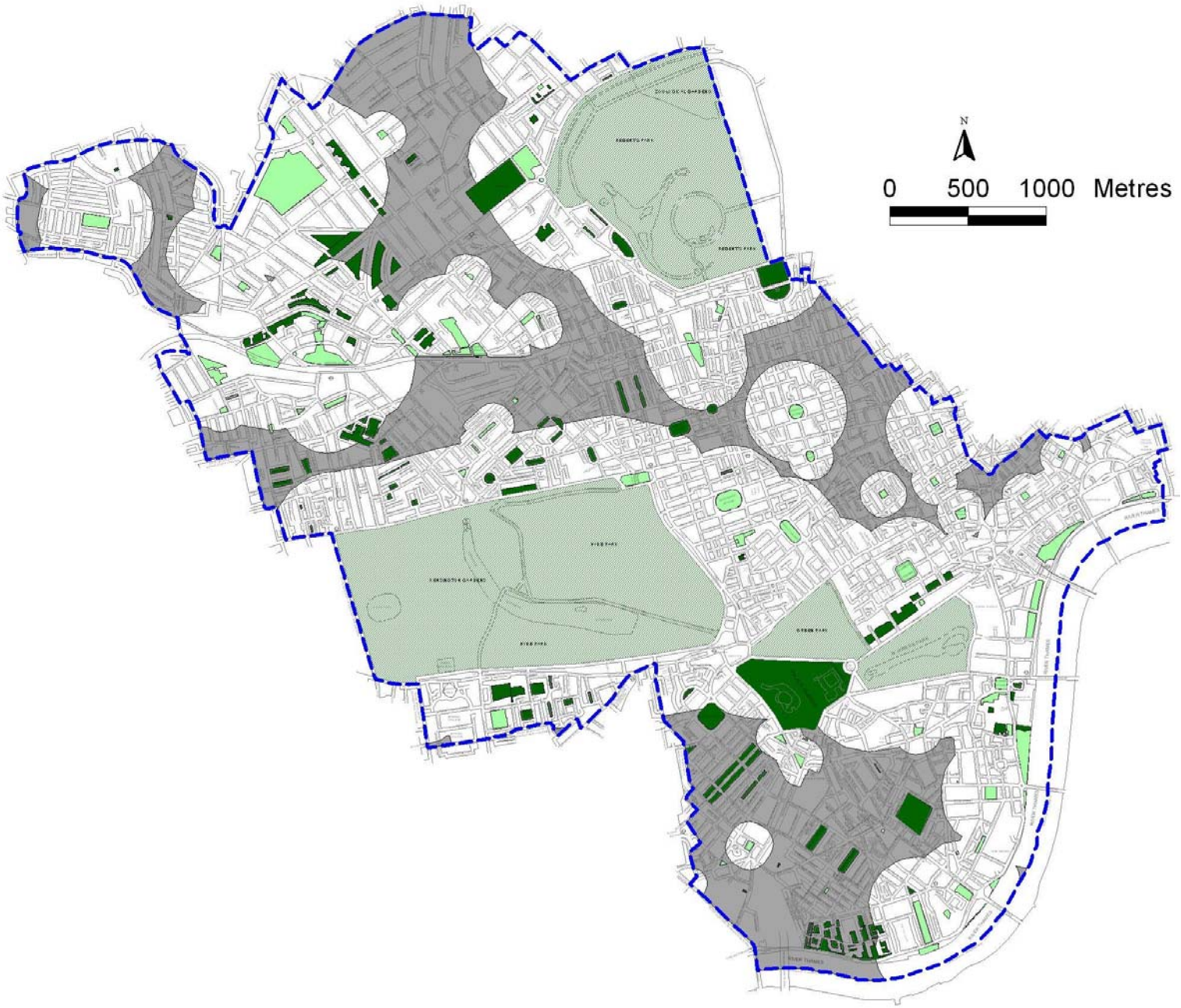
9 This map has been extracted from council's Open Space Strategy. Further details are provided in Appendix E.

10 Veteran trees are trees which, because of their great age, size or condition, are of exceptional value culturally, in the landscape, or for wildlife.

11 More details on the Mayor of London's 2009 environmental programme are provided in Appendix E.

Public Open Space Deficiency in Westminster

Source – Westminster Open Space Strategy 2008



110. Generally speaking, urban areas will warm more than rural because buildings and hard surfaces absorb heat from the sun and reradiate the stored heat energy back into the atmosphere. The result of this 'heat island effect' can be higher temperatures, particularly at night, and in enclosed areas (including under tree canopies) in comparison to suburban and rural areas. The current maximum surface temperature of woodlands is 18.4 °C, compared to 31.2 °C in town centres[12].

Summary of expected climate change in the UK[13]	
Temperature	• Annual warming by the end of the century of between 1°C and 5°C • Greater warming in the Southeast than in the Northwest • Increase in the number of very hot days • Decrease in the number of very cold days
Precipitation	• Generally wetter winters (by up to 30%) increase in winter precipitation intensity • Substantially drier summers
Soil Moisture	• Decreases in summer and autumn, especially in the Southeast • Increases in winter

111. Periods of unusually high temperatures (heat waves) are predicted to become more frequent and last longer, with town centres predicted to experience a bigger temperature rise than rural. Green space, in the form of street trees, parks, and private gardens has a significant role to play in reducing the urban heat island effect. A 10% increase in trees, in the right places, can reduce surface temperatures by 3-4°C.

112. Although it is not straightforward within Westminster to plan green space at the strategic level (as would be the case with greenfield development) there is much that can be done at the local neighbourhood level to moderate the effects of climate change. Shade provided by trees can keep hard surfaces cooler than unshaded areas by several degrees, and trees, especially when located close to buildings, provide not only shade but act as natural cooling systems through the process of evapotranspiration.

113. While it is recognised that not every street is suitable for trees both in terms of practicality and urban design, maximising the opportunities to plant larger growing shade trees will assist in the moderation of high summer temperatures and in so doing make Westminster a more liveable city.

114. It is anticipated that trees will also need to be more adapted to a hotter, drier climate and consideration should perhaps be given to tree species that are indigenous in climates similar to those predicted for the south of England around 2040-2060. The adaptability of our existing tree stock (eg. oak) will also be increasingly relevant.

12 Adaption Strategies for Climate Change in the Urban Environment
13 CLG, 2007, Climate Change and Urban Spaces .

Air Quality

115. The green, clean city requires an integrated design and trees with appropriate qualities have a role to play in improving air quality in Westminster. The "right tree, right place" principle needs to be implemented when making selections[14].

116. The fact is, however, that Westminster's air quality is seriously compromised by pollution from traffic and other sources. A good mix of trees (and other plants) is best used to minimise this, although effective species selection could help alleviate local conditions.

Other Planting

117. Other forms of greening can be used in locations that are not suitable for street tree planting. Vines on wires across small spaces, and creepers on blind flank walls provide alternatives to the straightforward option of planting a street tree. Property rights will be involved, but where an alternative may be desirable, suitable agreements with the owner of the wall will be brokered, allowing the council to plant in its highway and maintain the plant.

118. The use of first floor flower boxes in Covent Garden for instance, continues a local tradition originating from the eighteenth and nineteenth century (although not an original design intention) and provides a good example of alternative greening of the City. Recent studies[15] on the area advocate the continued use of flower boxes to enhance the character of the area.

Piccadilly, W1 (Athenaeum Hotel) and King Street, WC2: Green walls and private planters can provide welcome greening in some locations where planting trees would be inappropriate.

14 Refer to Appendix D for discussion of some species which are suitable for efficient removal of different types of air pollution.

15 See Covent Garden Area Trust, 2004, *Caring for Covent Garden: A conservation and management guide* & Westminster City Council's 2004 *Covent Garden Action Plan*.

9. IMPLEMENTATION

119. The types of activity relevant to this document include the City Council's annual tree planting and management programme, investment in parks, S106 agreements for street tree planting, or third party projects such as the Royal Parks Agency or Transport for London. This is not intended to be an exhaustive list but an example of activities.

Tree Planting Programme

120. An annual tree planting programme is devised by Council officers according to need, demand and physical constraints within the design and policy framework set out in this document. The programme is approved by the appropriate Cabinet Member.

Coordination Mechanism

122. An officer review group, Public Realm Officer Group, will review any proposals for new street tree planting, including the annual tree planting programme, and put forward appropriate advice and recommendations to Members.

123. In some cases where proposals are put forward for tree planting, particularly in areas where new planting should be approached with caution, as outlined in this document, it may be necessary for a site visit with all interested parties to explore the possibilities on the ground before recommendations are made.

APPENDIX A
GREAT TREES OF LONDON

The Great Trees of London initiative was originally developed by the London Tree Forum and supported by The Countryside Alliance, to celebrate and bring to the public's attention the importance and uniqueness of London's tree heritage. This initiative is mentioned in the London Plan to promote significant trees.

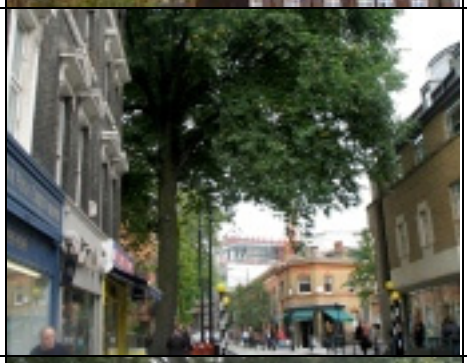
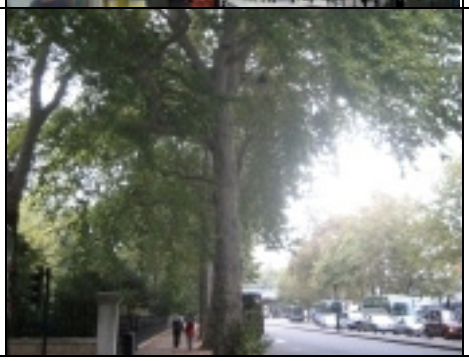
The first wave of Great Trees were chosen by a public nominations campaign in the Spring of 1997. Two trees within Westminster were identified as Great Trees (see 1 and 2 below). In October 2008 Trees for Cities selected another 20 Great Trees, 5 of which are in Westminster (see 3 -7 below).

All new Great Trees are publicly accessible (easily viewed from all sides) so that they can be visited and enjoyed by all and they were judged on the following criteria:

- historical significance – is the tree related to past events and/or people, or with a story to tell
- location – is the tree situated in a landmark location or somewhere special
- physical character – is the tree very large, or old, or an unusual shape

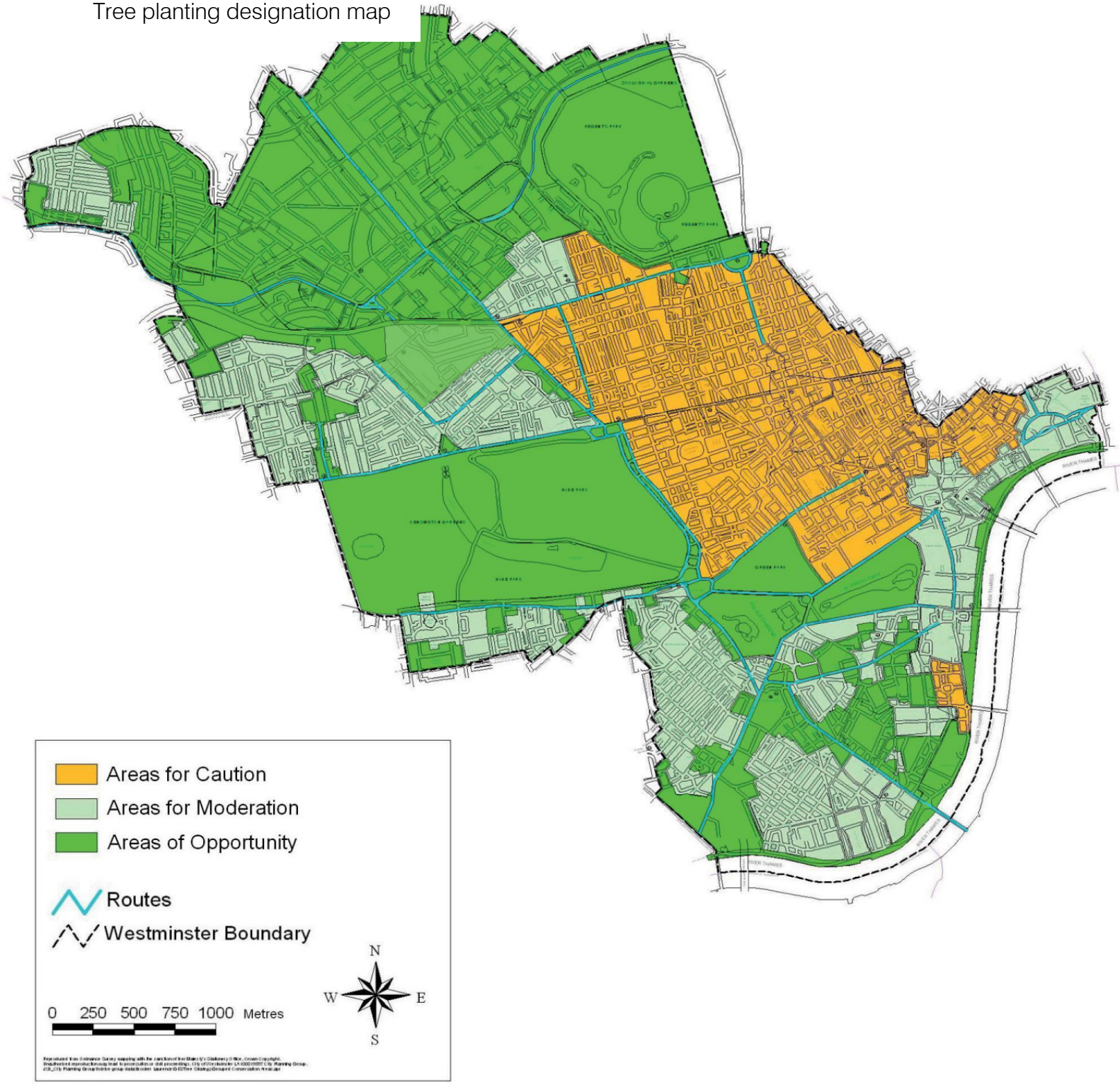
Details of the seven Great Trees within Westminster are provided below. All information and photos have been sourced from the Trees For Cities webpage (see references in Appendix I).

Name	Photo	Description
1. St. James' Church Indian Bean Tree Piccadilly, W1		An old and interesting specimen of this relatively uncommon tree species, thriving in the heart of London's busy West End. This tree, one of the oldest of its kind in the country, creates a tranquil setting in St James's churchyard, particularly when in flower during the summer months.
2. The Dorchester Plane Park Lane, W1		A large semi-mature London Plane, planted around the time of the opening of the Dorchester Hotel. It has a beautiful form and shape and is dramatic when lit up at night. A landmark in London's West End and a tree "to give directions by".

Name	Photo	Description
3. The Abbey Plane Broad Sanctuary, SW1		On July 8 2005 a wreath was laid on the memorial to Innocent Victims at the Abbey to remember those who had been killed or injured in the bombings the day before. The wreath contained London Plane leaves to symbolize London. London Planes like this, although not a native tree, have become a part of the history of the city.
4. The Berkeley Plane Berkeley Square, W1		Tall and handsome, the Berkeley Plane has thick, leathery leaves that turn a rich golden yellow in autumn. Round fruits hang from slender stalks. The nominated tree is one of the tallest in Berkeley Square, standing some 30m high, and is particularly striking with three strong, wide spreading branches.
5. The Regent's Plane Regents Park, W2		It is testament to the resilience of the species that The Regent Plane, a fine example of the London Plane, has survived the Industrial Revolution, two World Wars and the many other changes in our society over the last 200 years. Regent's Park, although owned by the crown since the days of Charles II, was previously rented out to farmers. However, in 1811 the Prince Regent, who later became King George IV, commissioned the park.
6. The Marylebone Elm Marylebone High Street, W1		The Marylebone Elm, a Huntingdon Elm, has escaped the depredations of Dutch Elm disease, making it the last Elm tree standing in Westminster. It still thrives and produces flowers every year. There are no mature English Elms in London and Huntingdon Elms like this example are a rare find.
7. The Embankment Plane, Embankment SW1		The magnificent Embankment Plane on Victoria Embankment, whilst demonstrably a member of the London Plane family, takes a leaf out of a cousin's book to achieve its individuality. Standing at the junction with Horse Guards Avenue, the Embankment Plane is the finest example amongst its brothers lining this major thoroughfare.

APPENDIX B
TOWNSCAPE AREAS AND PLANTING PRINCIPLES

Tree planting designation map



1	Opportunity	Council-owned parks and open spaces

Character

The Royal Parks (Regents Park, Hyde Park, Green Park and St. James's Park) provide by far the largest areas of open space within Westminster which are not under the control of the Council; nevertheless the council maintains approximately 120 acres of open space. There are few large council-managed parks in the city, Paddington Recreation Ground (10.8 hectares) and Victoria Embankment Gardens (4.5 hectares) are the largest. However, there are many smaller open spaces, often known as 'pocket parks' which owing to their location, and abundance of mature trees, and in some cases historic landscapes (as set out in English Heritage's Register of Parks and Gardens of Special Historic Interest), provide levels of amenity that are much greater than their modest size would suggest.

Trees

Trees, especially large mature trees, are frequently the dominant landscape component of the park and can define the layout of recreational space. Westminster's parks are generally well stocked with trees, and as a consequence it should be recognised that opportunities for new planting are limited without encroaching onto areas of open space. The edges of parks should be explored to ensure all opportunities have been taken to enclose the space in accordance with the landscape design intent.

Planting principles	1. Identify and evaluate the age and species structure of the tree population with a view to strategic renewal programme over the long-term which maintains, as a minimum, current standards of amenity and biodiversity. 2. Plant species appropriate to the conditions and character of the site, and where appropriate of known provenance, and ensure that new tree planting does not reduce the value of the existing landscape or townscape. 3. Ensure that new planting considers, and makes a positive contribution towards, the ecological character of the site. Where possible, standing dead wood will be retained for its contribution to biodiversity. 4. Remove specimens where it is justified to implement an agreed landscape plan, or, if it is appropriate, to assist the preservation or restoration of historic landscapes or views. 5. Where major replanting schemes are proposed, the City Council will consult with interested parties such as neighbours, amenity associations, and area forums.

1	Opportunity	Council-owned parks and open spaces

Photos

Green Park in the spring, and in the autumn: An avenue of mature trees can give a sense of ordered nature, and allow appreciation in the city of the changing season

2	Opportunity	Mid - Late 20th century housing estates

Urban character and trees

North Westminster contains a large number of late twentieth century housing estates, many formed of high rise flat blocks while others are lower height, lower density estates.

The grounds in which these estates are set are invariably landscaped, to a greater or lesser degree. Some, like the Wessex Gardens Estate turn their backs on adjacent streets, and contain landscaped lawns within internal courtyards. Others, such as the Maida Vale estates (Maida Vale, Warwick etc.) are sited in open, park like grounds.

Tree planting on these sites should generally complement the original design of the estate although there may be flexibility for unusual species, or changes to their locations, should the original planting schemes be unclear or no longer fit for purpose.

Any design intent should be respected - considerations of scale and proximity of trees to buildings are important. Weight should also be placed on the amenity value of trees on these estates. Where there is less residential amenity inherent in the architectural form of the buildings there may well be scope to use planting to improve the experience of being in a place.

Residents of these estates will be very well placed to inform planting strategy. Trees that are hindering the fight against anti-social behaviour and criminal activity (for example those obscuring natural or CCTV surveillance) will be considered for pruning, and if necessary, removal.

Photos

Wessex Gardens Estate: interior courtyard

Crompton Street: open space plantings (sourced from Google Street View)

Chichester Road: street plantings (sourced from Google

2	Opportunity	Mid - Late 20th century housing estates

Street View)

Planting principles	1. The residential communities of these estates should be fully involved in any decision making about new planting. They will have detailed local knowledge and insights about the way spaces are used. 2. As in other areas, planting on estates should respect the scale, form, and materials of the architecture and open spaces. Trees should not be planted simply because there is space to do so, instead, their contribution to the estate should be maximised, and potential problems such as loss of light or sticky sap anticipated so that they can be minimised.

3	Opportunity	Late Victorian artizan housing

History

The Queen's Park Estate was built between 1874 and 1882 by the Artizans, Labourers and General Dwellings Company to provide decent accommodation for respectable working families. Built mainly in yellow stock brick, with some polychromatic brick detailing, the terraces are notable for their modest gothic detail, decorative turrets, gabled porches, and the distinctive goat head door knockers.

Urban character

The north west part of the city is characterised by two and three storey Victorian terraces in yellow stock brick, with less ornament than the mid Victorian period. These modest terraces are set on relatively broad streets which, in combination with low building heights, give a light and airy character to the area. They date from 1870 onwards.

The area can be subdivided into two distinct sections, the Queens Park Estate Conservation Area, and the undesignated area between Bravington Road and Walterton Road.

Trees

The plentiful street trees in the Queens Park Estate form an essential part of its character. While the Queen's Park buildings have small front gardens, most of the planting visible from the street is in the public realm.

London Plane trees are the dominant species, with around 400 pollarded planes in the Queens Park Estate which are contemporary with the original Queens Park development. At the time of planting and for a few succeeding decades, these trees would have been in tune with the scale of the housing. However, mature Plane trees in their natural form would overwhelm the small scale buildings of the estate so pollarding to just below eaves level has therefore been used to ensure that a balance is maintained. There are varying views on the appearance of these pollarded trees but it needs to be appreciated that this situation is unlikely to be changed without removal of the existing trees on a comprehensive street-wide basis. Any replacement would need to be balanced against the coherency of a single species planting plan and preferences of residents.

The undesignated terraces, centred on Fernhead and Shirland Roads have a greater variety of architecture, having grown up gradually. Embellishment is still kept to a minimum, with the bay windows and some distinctive terracotta decoration of Fernhead Road being the most notable. These roads are densely planted with a wider range of tree species than is found in the Queens Park Estate. Birch, Cherry and Alder are widespread alongside the London Plane.

The undesignated streets are improved by the existence of street trees. Unlike areas where repetitive architectural features and the widespread use of stucco ornament make long views important, the modest character of this part of Westminster means that trees can be accommodated without any harm to the townscape. In these localities the greatest opportunities exist for more planting with a wider diversity of species.

Planting principles	1. The London Planes on the Queen's Park Estate are a speicies original to the estate design, and as such are historically significant. However, the trees in their natural mature form are not in keeping with the scale of the buildings and so a tight management regime is essential to retain the balance. Replacement with an alternative species would be preferable but only as part of a cohesive approach, likely on a street by stret basis when the existing trees begin to reach the end of their life. 2. In the undesignated streets there are significant opportunities for more planting with a wide diversity of species.

3	Opportunity	Late Victorian artizan housing

Photos

Plane trees in Queens Park (Image on right sourced from Google Street View).

4	Opportunity	Arcadian Victorian

History

The principle of the Victorian Arcadian suburb was to create a district of housing within an idealised version of the countryside, which was both morally and physically distinct from the inner-city environment of the day. This was achieved by wide spacing of houses and the copious planting of trees in both public and private realms.

The Maida Vale Conservation Area and St John's Wood Conservation area are both recognised as being Arcadians suburbs. St John's Wood was originally envisaged as such, and as its name accurately reflects, it remains a densely planted area where trees are very important in the townscape.

Maida Vale was developed from around 1830, with the earliest buildings in the south of the conservation area associated with the new canal. The portion south of Sutherland Avenue was virtually complete by 1860, with the northern part of the conservation area developed over the next forty years. Pre 1860's development is mainly paired villas and terraces in brick and stucco, whereas the later development, including early examples of mansion blocks is in red brick.

Urban character

This area of north Westminster is overwhelmingly residential in character. Mid-nineteenth century brick and stucco villas, terraces and crescents form the majority of development, though later insertions include a number of red brick buildings, particularly Edwardian mansion blocks.

These planned residential areas are characterised by large proportions of well planted public and private open space. The built fringes of Regents Park Conservation Area also fall into this category.

The landscaping in this townscape area creates a continuous overlapping of the green network and the built fabric and is an essential part of the character of this leafy suburb.

The tree lined streets, vistas and major private amenity spaces combine to give the entire area a leafy character and, given the generous width of many of the roads, enhance the appearance of both buildings and spaces.

The Georgian Grand Union and Regent's canals form a key element in the character of Maida Vale. Lined with Planes and occasional oaks, the canal provides a cool, shady and open boundary to the area.

Trees

These trees are not only along the roadside, but both in front gardens and the extensive groups of rear gardens that characterise the area. The domestic gardens with hedges and shrubs are critical constituents of the appeal of the area.

The tree-lined avenues create a strong framework to many streets. For example, Hamilton Terrace, Maida Vale and Abercorn Place are lined each side with mature London Plane trees, which are in proportion to the wider roads lined with large villas.

By contrast parts of St John's Wood Terrace, are lined with smaller trees, which are in scale with the smaller size of the properties. The formality of the planting and the size and types of trees give varying experiences and create different characters to the roads. For example, parts of Clifton Hill, Woronzow Road and Norfolk Road have a great variety of tree species within the front gardens rather than along the pavement and give a suburban, leafy, less formal feel to the road. The contrast between the formal and informal should be maintained.

In addition to formal street planting and uncoordinated private planting there are individual mature trees which are interesting in form and type and create a focal point, such as the mature Ginko at the southern end of Ordnance Hill.

4	Opportunity	Arcadian Victorian

Photos

This aerial photograph of the Elgin Avenue area of Maida Vale shows what an important part trees play in establishing the character of the area.

Canal side planting at Little Venice helps give a cool, natural feel to this part of central London

Front Garden Planting in Woronzow Terrace show how mature, private trees of considerable size can contribute to the area's public character.

Planting principles

1. Street trees in this area are of paramount importance to its character – they are a defining feature of these conservation areas. Succession will be carefully planned to ensure continued presence into the future. Avenues will be maintained in a single species.
2. Trees in private front and rear gardens also make a very significant contribution to these conservation areas. Private planting is encouraged, subject to consideration of any issues set out in this document, where relevant.

5	Opportunity	The Riverside

Urban character

Riverside streets, gardens and walks, and some streets leading up to the embankment.

With the exception of the length of the Palace of Westminster, the course of the Thames is followed by a route, called variously Grosvenor Road, Millbank and Victoria Embankment, along its entire length through Westminster.

Along its western stretch, large, formal architecture – such as the Tate Gallery, and Thames House face the route and front onto the river. Downstream, the buildings, while still tending to the large, formal and institutional, turn their backs on the river, facing instead onto Whitehall or the Strand.

Trees

This route is densely planted along its entire length with large London Plane trees, creating a shady riverside walk, and softening the massive architecture that characterises riverfront development.

Distributed along the length of the riverside are a number of gardens, from Pimlico Gardens in the west to Victoria Embankment Gardens in the east. Victoria Embankment Gardens were created by Bazalgette in the 1860s as part of a massive civil engineering project that included the reclaiming of 37 acres of tidal riverside for sewers and underground railway tunnels. Over the top of these, the gardens were created for the enjoyment of all, with the last sections laid out in 1875.

The gardens contain a much greater variety of trees, although the London Plane remains the principal large species. Smaller species include cherries, laburnum, maples, apples and cypress.

There are some private forecourts, for example at the Tate, which contain trees which make a positive contribution to the character of this area. Maintenance of existing trees, as well as planting of new trees should be encouraged in these locations.

The other gardens along the riverside – most notably Pimlico Gardens and Victoria Tower Gardens feature far fewer ornamental species, and take the form of lawns surrounded by tall Plane trees.

Photos

Semi mature Plane trees on Millbank help give the openness of the river a further ‘natural’ dimension, and helps alleviate noise and pollution from the road traffic.

Victoria Tower Gardens form a respectful setting for the Palace of Westminster, and a welcome riverside green oasis

5	Opportunity	The Riverside

Photos

These trees soften this route along Embankment, making a more pleasant place for pedestrians and framing views.

Planting principles	
	1. The maintenance of the riverside avenues of Plane trees is of the utmost importance. The character of this part of Westminster is determined principally by the river, and by these trees. Succession needs to be carefully planned to ensure the avenue is maintained.
	2. Replacements for trees lost to disease, high winds etc should be semi mature and piecemeal replacement considered against the benefits of also replacing the trees opposite number, if any, across the carriageway.
	3. The Plane trees on Millbank are substantially younger, and more widely spaced than those further east. There is perhaps scope for further planting in this area

6	Opportunity	Vincent Square

History

The land which now forms the Vincent Square Conservation Area was, as recently as the mid-eighteenth century, an area of un-enclosed land, known as Tothill Fields. In 1811 Vauxhall Bridge Road laid out as new approach road to Vauxhall Bridge and the two northern sides of the square were first built up with villas shortly after. From 1870-1910 a number of hospitals and other institutional buildings constructed in the area, including New Police Station and Police Court.

Urban character

Vincent Square Conservation Area has a peaceful, predominantly residential character, which contrasts with the busy streets around. At the heart of the conservation area is the expansive area of green open space formed by the playing fields, this surrounded by tall mature Plane trees. The size of the space creates a pleasant, open setting, with many long views into surrounding areas.

Around the perimeter of the square, the townscape has a varied character, with an attractive mix of building ages and styles. Whilst the area retains a residential feel, there are also a number of larger institutional buildings and the long historical association with educational, health-related and charitable uses still has an influence on the area's character. Busier and more commercial streets form the outside boundaries to the conservation area.

Trees

Vincent Square consists of the private Westminster School playing field, planted with numerous London Planes all around its circumference, with some other species interspersed, including sycamore. The green open space at Vincent Square is particularly important both in terms of visual amenity and as a habitat for wildlife, as this is one of the few open spaces in this otherwise urban part of Westminster. The Planes form part of the original design, and as such are historically significant.

On Rochester Row, there are a number of large Plane trees on both sides of the street, which provide a soft edge to this otherwise busy traffic route.

The streets to the southwest of the square are planted with ornamental Pear trees while elsewhere in the conservation area are individual examples of Whitebeam.

Photos

Trees outside St Stephen's Church on Rochester Row

Vincent Square's mature Planes contribute hugely to the surrounding properties desirability as residences and provide a cool oasis in a hard urban area

7	Opportunity	Routes

Urban character and trees

The function of a number of main roads in Westminster is the accommodation of vehicular traffic whose destination is outside the city. Our planting regime needs to recognise that this traffic is consistent, and at peak times can be congested.

Several of these routes are Transport for London Road Network (TLRN) routes that are administered and maintained by TfL as strategic routes, connecting major centres and accommodating numerous bus routes. Whilst the City Council remains responsible for the planting and maintenance along these routes, The Council will work in partnership with TfL on TLRN routes to ensure the form and function of the streets are compatible.

Others are designated as 'Green Chains' in the London Plan, which are defined as "areas of linked but separate open spaces and the footpaths between them. They are accessible to the public and provide way-marked paths and other pedestrian and cycle routes." This definition excludes routes that are mainly on streets, and in Westminster are:

• The linked route from the Thames, through Victoria Tower Gardens, Parliament Square, St James's Park, Green Park, Hyde Park and Kensington Gardens – (Hyde Park Corner forms a crucial link between Green Park and Hyde Park, and enhancements would improve access between the sites)

• A linked route with the London Borough of Camden, running from Primrose Hill along Ormonde Terrace across Primrose Hill Bridge and into Regent's Park/Grand Union Canal.

Trees can be perceived as a welcome, calm counterpoint to the bustle of the traffic. They can also, particularly if planted as avenue, increase drivers' perception of speed and encourage a reduction. Planted in the street furniture zone adjacent to the kerb, trees can also act to some extent as a barrier to the traffic, making the pedestrian environment more pleasant.

Photos

Park Lane (sourced from Google Street View)

Marylebone Road (sourced from Google Street View)

7	Opportunity	Routes

Planting principles	1. Avenues of trees able to grow to become specimens of scale and quality are acceptable in principle on all routes. 2. Care must be taken to ensure that trees planted on primary roads and bus routes are located sufficient distance from the kerb to ensure that the incremental growth and lean of trunks does not present a hazard to the high sides of vehicles over the expected lifespan of the tree. 3. Where there is sufficient width, boulevards may be created by planting down the median strip or central reservation 4. Species should be hardy and able to grow to the maximum scale appropriate for the streets dimensions. 5. Green chains should be maintained with attractive trees that maximise shade where practical.

8	Opportunity	Public realm within new development schemes

The guidance provided in this section applies to all contemporary development sites of a scale whereby building mass and form can be configured to integrate public realm within the site. Whilst Paddington, Chelsea Barracks and Victoria are the only such areas shown on the townscape areas map, this section applies to all sites which meet these characteristics.

However it should be noted that this section only generally refers to public realm in addition to that which is generally required as part of the street curtilage. Street trees adjacent to development sites for instance should be generally considered with reference to the townscape area which the site is located within.

Trees and built form

As noted in Section 3 of this document, trees add value to development. These benefits include: attractiveness, stature, creating a sense of place, assisting with way-finding and, crucially, for casting deep shade and cooling our buildings, public squares and meeting places in future. However, the number of trees planted is less relevant than the quality and scale of the trees planted. It is the larger landscape species of trees that confer the greatest benefit.

The principal aim should be “the right trees in the right places”, with the emphasis not on numbers of trees, but the inclusion of trees that are able to grow into specimens of quality and scale for that site.

Space for planting should be integrated into layout and building designs, and, wherever possible, located on private land or buildings (generous balconies, roof gardens, walls) or public land intended for adoption, including the highway.

Street layouts, geometries and networks should aim to make the environment self-explanatory to all users, and features such as trees (in addition to others such as public art, planting, lighting and architectural style – see the Westminster Way for more details) can assist navigation and potentially reducing the need for cluttering signs.

Other considerations

The council will, where appropriate, require suitable landscaping of developments that as a minimum maintains existing levels of amenity. This can be secured through the use of planning conditions and Section 106 agreements. The objective will be to enhance the amenity of the development and its environs through tree planting, and also to increase biodiversity.

Street lighting should be planned as an integral part of the design of the street layout, and in conjunction with the location and anticipated growth of planting. The potential for planting to obscure lighting through growth should be considered when deciding what and where to plant.

If the council is not to be responsible for tree maintenance in the public realm, alternative innovative arrangements may be required to ensure sustainable management of the landscape. These may include the careful design of ownership boundaries, the use of covenants, and annual service charges on new properties.

Funding for initial set-up costs and an endowment to generate income for maintenance (e.g. executive staff, gardening staff, site offices, equipment, machinery, stores, compost/leaf litter-bins), and community and resident facilities capable of generating regular income, may be sought under a Section 106 agreements. Contributions to cover the cost of tree planting in other locations, should trees be lost due to development, may be required.

8	Opportunity	Public realm within new development schemes

Supplementary Planning Guidance “Trees and other planting on Development Sites” (2004) contains detailed advice on planting on sites of new development. It includes important advice on:

- The importance of incorporating planting in the early stages of design
- Opportunities for inclusion of greenery in new development
- The protection of existing trees on development sites
- The effect of new buildings and services on existing trees
- The effect of associated building activities on existing trees
- Planting new trees on new development sites
- Planting in front garden spaces
- Obstruction of daylight and sunlight

Photos

Monck Street - Planting integrated into the development

Trees planted within Grosvenor Waterside

9	Moderation	Victorian Stucco terraces and squares

History

Victorian Stucco terraces and squares characterise Belgravia, Bayswater, Westbourne and Pimlico. These four conservation areas, dispersed across Westminster, represent a comparatively short phase of development, between 1830 (Belgravia) and 1870 (the completion of Pimlico). At the time these areas were planned and constructed they represented an increasing suburbanisation around existing neighbourhoods – Westbourne and Bayswater to the west of the great Georgian Marylebone estates, Belgravia to the south west of old-established Mayfair, and Pimlico on reclaimed riverside marshland south of Smith Square and Victoria.

Urban character

The characteristics that these four districts share are that they were all laid out to a masterplan, rather than developing piecemeal over time. They all show the prevailing fashion, established in the Georgian period, for classical revival architecture, expressed for the most part as full or half stucco treatment to brick buildings. Classical details such as rustication, pedimented windows and columned porches form the language of the facades; window size and arrangement, door openings and column proportion all determined by classical proportions, while being applied to the terraced building form, unknown in the classical period. In some cases terraces have central and wing pavilions to emulate larger palaces.

The four ‘stucco’ districts are thus characterised by long and uninterrupted views of formal architecture, notable for a consistency of form and a repetition of detail. The long, unbroken parapets, regular porches and alternating pediment forms make this a form of architecture best appreciated as whole, rather than as individual examples or as seen in glimpses.

Trees

The use of planting in the historic, planned layout of these areas was restricted to the large, formal squares, and in some instances to the grander avenues. This clear and sharp separation of green spaces from buildings and streets contributes significantly to the ‘urban’ character of these areas. Unfortunately indiscriminate planting on build-outs in the 1960’s eroded this character. A compromise now needs to be struck between the introduction/retention of trees into these streets, and an ability to appreciate the architectural intention, and trees at road junctions only would seem to meet both objectives to an extent.

London Plane is the chief species among these formal planting schemes – the large size of the squares means that large tree species can be accommodated happily, without either disrupting or overshadowing the very formal architecture of the surrounding buildings. Thus the squares became the green lungs of an otherwise hard urban landscape – the dense greenery of the tree canopy often visible in long views down approaching streets. Those planted at road junctions should be less dominant, with silver birch, rowan or perhaps redwood being appropriate.

The buildings in these areas are generally provided with rear gardens. Where private trees in rear gardens are visible from the street they make a positive contribution to the greening of the townscape, and do so without compromising the architectural form.

In Pimlico (as well as in other neighbourhoods) there is a characteristic townscape gap at the corners of street blocks. The presence of a rear garden to the principal terrace is expressed architecturally as single storey development on the return elevation. This ‘Pimlico Gap’ was incorporated not only to articulate the different terraces, but also to provide for the circulation of air to the rear of the terraces. These gaps now often provide a glimpse of greenery in rear gardens – an important feature of these areas.

9	Moderation	Victorian Stucco terraces and squares

Photos

The greenery of Ecclestone Square, visible along St George's Drive, Pimlico, flanked with formal neo-classical architecture, best appreciated as a set piece.

An example of the 'Pimlico gap', with private trees contributing to the public realm without obscuring facades or obstructing footways

An example of alternative greening

Planting principles

1. Planting should in the first instance follow the historic principle - formal squares and grand avenues should be the first areas considered for new planting in the limited circumstances where this is possible. Private gardens are another important location for trees, and appropriate planting visible from the street should be encouraged.
2. Where the planting of previously clear streets is contemplated, or has been undertaken in recent years, tree species should be subordinate to the architecture, both in scale and location. Continuous, uninterrupted views should not be interrupted, but trees maintained in the squares to keep this relationship.
3. Trees should be carefully sited at junctions to ensure the continued ability to appreciate these planned streets of neo-classical architecture.
4. Mews are generally unsuitable for planting trees but other alternative forms of planting may be appropriate.

10	Moderation	Knightsbridge

Urban character and trees

The Knightsbridge area, the portion of Westminster West of Belgravia and south of Hyde Park is an architecturally mixed area, in which trees play an extremely important role.

The area can be subdivided into three portions; 'Albertopolis', to the west of Exhibition Road, an area of terraces and squares to the centre of the area, and an area of larger Victorian mansion blocks to the east.

The westernmost portion is dominated by the Royal Albert Hall, and contains several other large institutional uses as well as a number of mansion blocks adjacent to the hall. Building in this area is largely in red brick, and of large scale. This section is framed by Queens Gate and Exhibition Road, both of which broad streets feature terraces of mid nineteenth century houses, mostly stucco, rising to four floors plus attic.

These two framing roads are both well planted – Queens Gate particularly so. Large mature Planes are appropriately scaled for this broad street of large houses. There is a variety to the architecture within the consistency of materials and scale which is enhanced by the large trees framing views of individual properties.

The central section is formed of a network of eight garden squares, their associated mews and connecting streets. Housing in this area, while still of terraced form, tends to the smaller, particularly to the east of the area. Buildings are lower, plots are smaller and streets are narrower, creating a sense of intimacy, rather than grandeur. Terraces in this area are of stucco, half stucco or Portland Stone.

The garden squares including Trevor, Montpelier, Rutland Gate, Ennismore and Princes Gardens, all contain a large number of mature trees, and with the sometimes narrow streets this creates an intimate, shady character. The tall trees largely obscure views across the squares, effectively creating a pattern of streets with one built and one planted side.

The east of the area, formed of Albert Gate and Knightsbridge Green Conservation Areas, consists mainly of large scale red brick mansion block and hotel buildings, with some commercial premises. This area is almost entirely devoid of street trees, but nonetheless benefits from the proximity of the park.

Of critical importance to the character of the area is the relationship with Hyde Park / Kensington Gardens. Glimpsed up north/south routes, through gaps between buildings and over the top of smaller buildings, this green setting forms a constant backdrop to this part of Westminster.of old-established Mayfair, and Pimlico on reclaimed riverside marshland south of Smith Square and Victoria.

Photos

Stucco and half stucco houses surround a garden square containing tall mature trees, and a border of smaller shrubs. The visibility of the architecture, and its contrast with the squares is to be preserved.

Princes Gardens (sourced from Google Street View).

10	Moderation	Knightsbridge

Planting principles	1. The garden squares are of great importance in creating the character of the area, and their character should be preserved as a priority, with succession plans formulated 2. There is little scope for new planting around the squares of Knightsbridge, due to narrow streets and pavements.

11	Moderation	The Government Precinct

Urban character and trees

This area is united more by the character of its land uses than a single developmental phase or architectural form. Nonetheless that character, of the bureaucratic, ceremonial and royal heart of London does have a significant impact on the management of its townscape with regard to trees.

This area is, in common with many other areas of pre-Victorian street plan, characterised by a hard treeless streetscape, punctuated by occasional islands of planting, usually in public squares or private gardens.

Christchurch Gardensand Parliament Square are the two historic areas of significant tree planting in this townscape area. These areas occupy a very small proportion of the total area.

Christchurch Gardens, a former churchyard, has a number of very fine large old London Plane trees, dating from the original churchyard planting. The trees create a shady informal place which, despite its proximity to busy Victoria Street, has a quiet, calm character. In addition to the mature trees in the garden some younger planting, particularly a pleached (or trained) lime hedge, serves to reduce the impact of the twentieth century buildings to the north.

Northumberland Avenue contains a significant avenue of Plane trees. Unlike the surrounding areas, Northumberland Avenue is a late insertion to the historic street pattern of the area, carved through existing buildings by the Board of Works in the 1870s. The planting is contemporary with the creation of Victoria Embankment, and recalls Haussmann's mid nineteenth century Parisian boulevards.

Trafalgar Square generally presents a hard urban appearance, which is mitigated by the interest of the other aspects of townscape – fountains, sculpture and a variety of architectural form. The Plane trees here also provide a degree of welcome contrast to the landscape even if their contribution to the original character of the area may be debatable.

Parliament Square contains a number of trees. Whilst this is a large scale space, the potential for the trees to obscure views of some of the most iconic buildings in London needs to be considered. Trees and greenery welcome people to the seat of Government, but should be carefully managed to form a respectful foreground to the magnificent architecture.

Further small enclaves of planting, such as Brewers Green and Richmond Terrace, form welcome pause points within the townscape.

St James's Park and the riverside also relieve the hard landscape by providing leafy backdrop to this Townscape Area.

Planting principles

1. This Townscape Area is, in main part, hard and treeless. This is not to its detriment, as the hard landscape is well designed and maintained. There is no pressing need for further tree planting in this area.
2. There are few areas suitable for further street planting – planting on new development sites within the area however would be welcomed

11	Moderation	The Government Precinct

Photos

The street tree outside Banqueting House on Whitehall: These photos illustrate the need to consider the visual impact of trees from a variety of angles. (both photos sources from Google Street View).

Trafalgar Square: The end of the avenue of mature trees on Northumberland Avenue can be seen to the left of the picture, which in turn lead to the avenue on Victoria Embankment.

12	Moderation	Strand and Aldwych

History

The Strand has been continuously developed for a longer period and over a larger area than almost any other part of the City of Westminster. The principle reason for this is its proximity to the ancient boundary of the City of London and the River Thames.

The present street pattern was largely developed between 1890 and 1905, including the laying out of Kingsway and Aldwych. These grand new thoroughfares made a significant contribution to the perception of Edwardian London as a great Imperial City. Together with the major improvements at the Buckingham Palace and Trafalgar Square ends of the Mall contributed to the great processional route to St Paul's which remains the ceremonial focus of the Country.

Urban character

Aldwych and Kingsway have relatively uniform rhythms and proportions to the stone facades which are based on Edwardian classical principles, some with other more decorative influences.

The Strand has a more varied building stock, particularly on the southern side where a variety of traditional building forms remain preserving the narrow plot pattern with a mixture of styles resulting in a townscape that has evolved sensitively over the years.

Trees

Street trees are a defining feature of the area. Mature trees line the wide pavements characteristic of the principal streets notably the Strand, Kingsway and Aldwych. This reinforces the importance of these streets as major routes and provides a green foil to the surrounding built environment as well as acting as important features in the setting of the listed buildings.

Whilst the majority of the trees in the conservation area are Plane there are three Oaks outside Arundel Great Court on the Strand and Ginkgo trees can be found on Arundel Street, Temple Place and outside St Mary le Strand

Photos

Planting along the northern side of Strand, looking east towards St Mary-le-Strand (sourced from Google Street View).

Trees in Aldwych (sourced from Google Street View).

13	Moderation	Victorian and Edwardian South Westminster

History

This conservation area comprises Westminster Cathedral and the streets immediately surrounding it to the south of Victoria Street.

The street pattern and buildings we see in the area today largely stem from the late 19th century when the Free Byzantine style, brick and Portland stone cathedral was constructed. Around it were built residential blocks for the clergy, red brick mansion houses and some commercial, warehouse style buildings.

Urban character

Development in this part of south Westminster is a great deal more varied than in other parts of the city. It consists of a patchwork of Victorian and Edwardian development, often replacing older slum accommodation. Occasional examples of Georgian buildings survive, though these form a distinct minority. Pockets of conservation area are connected by areas of more mixed townscape, including much late twentieth century redevelopment.

Trees

Many of the streets in this part of Westminster are too narrow to readily admit the planting of trees. In some instances the canyon-like effect of narrow streets with tall buildings has resulted in a bowing of trees as they strive to reach the light. Species choice is hence very important when considering planting in this area.

While the Cathedral piazza is a hard landscape, entirely devoid of trees, some of the adjoining streets are planted with a variety of species including smaller ornamental pears and cherry trees, as well as some larger Plane trees.

In the central piazza and lining down the eastern side of Morpeth Terrace are a row of attractive London Plane trees, whilst Thirleby Road has a number of Myrobalan Plum and on Emery Hill Street there are Himalayan White Barked Birch. Elsewhere in the area there are a number of Chanticleer Pear trees, predominately in the northern part behind Ashdown House. One Pillar Apple is found at the southern end of Ambrosden Avenue and there is a very fine London Plane tree on the corner of Carlisle Place and Ashley Place.

Some of the mansion blocks have also used their balcony and entrance areas to house a variety of attractive pot plants and shrubbery that soften the urban character of the townscape and contribute greatly to the overall character of the area. Planters along Howick Place also help to minimise the impact of the service entrances.

Planting principles	1. Where space allows, the hard and mixed character of this part of Westminster could be improved by new planting of appropriate species. 2. Large tree species are unlikely to be suitable – smaller species such as Birch have been used with success in this area.

13	Moderation	Victorian and Edwardian South Westminster

Photos

Street trees on Ashley Place

London Plane trees, Morpeth Terrace

14	Moderation	Planned estates of high architectural quality

A variety of estates of 20th Century flats can be found throughout the City of Westminster, but particularly towards the southern and northern edges. They range from a variety of periods from the earliest local authority housing, such as the Millbank Estate, to late twentieth century private flats, such as those on the Grosvenor Road.

Churchill Gardens

Churchill Gardens estate was designed in 1945 by architects Powell and Moya in response to a local Council competition. It was built between 1946 – 1962 and received a Festival of Britain merit award, was recognised by RIBA with a design award and twice by the Civic Trust with the 40 year award of awards. The modernist blocks in concrete, steel and glass marked a step change with the prevailing 'cottage' style of social housing provision which was prevalent before 1939. The buildings are skilfully arranged to allow a light and open landscape, despite a high residential density. Although the detailing of the blocks varies from phase to phase, the Estate achieves an overall integrity of design, which is enhanced by the sympathetic planting.

Tree planting on site should be (and is) ordered and formal, to complement the clean lines and uncluttered spaces of the modernist design. While the arrangement of buildings could in principle accommodate large trees, the character of the estate is dominated by the listed blocks which command views into and across the estate. Planting in this area should aim to be subservient to the architectural form.

Lillington Gardens

Lillington Gardens is a high density, medium rise residential development which was commenced in 1961, and completed in 1971 to award winning designs by Darbourne and Darke. Most of the buildings are listed, both the surviving Victorian elements, and the twentieth century housing. The estate is characterised by red brick and concrete, with each large block broken down into smaller units with a broken skyline, a variety of openings, balconies stepping forward and back.

Similarly, planting in the open spaces within Lillington Gardens is informal and lively. Around the landscaped lawns are a variety of species, including colourful ornamental trees and shrubs. Species represented include hornbeam, silver birch, rowan and cherry. Planting in these courtyards is relatively dense, creating green oases away from the hard townscapes of Vauxhall Bridge Road and Tachbrook Street.

The gardens have been well managed to suit modern day needs and have been successful in gaining an annual Green Flag Award in recent years, demonstrating the high standard of design and management.

Page Street

The Page Street estate by Edwin Lutyens dates from 1928-30, and is listed grade II. The white rendered chequerboard elevations of these large tenement blocks form a familiar landmark in this otherwise low-rise part of south Westminster.

The courtyards within the blocks, opening onto Page Street are planted with a mixture of trees and shrubs, behind dwarf walls or railings. These planting schemes offer neither the formal arrangement of trees that would complement the rectilinear designs of the blocks, nor an informal landscaped space.

14	Moderation	Planned estates of high architectural quality

Fisherton Street Estate

The Fisherton Street and surrounding estates are a group of inter war social housing blocks of varying design, constructed as part of the 'Homes for Heroes' house building programme that followed the First World War. Built in red, brown and yellow brick and roofed with plain clay or pan tiles, these blocks rarely exceed four storeys. The blocks share a simple restrained design which is typical of the era, as is the thoughtful landscaping surrounding them.

The undulating and well planted landscaping of this area gives a park-like ambiance to the area, with large, shade giving trees well balanced with smaller, ornamental species. Dwarf stone walls in combination with clipped hedges soften hard street frontages while mature shade giving trees are found in courtyards or

landscaped areas. Wide use is made of the Plane and alder as street trees, and landscaped areas afford the opportunity for a greater variety of species, which currently includes cherry, lime, maple, rowan and birch trees

The Hallfield Estate

The Hallfield Estate was built between 1951 and 1959 to designs by architectural practice Drake and Lasdun, and replaced 17 acres of Victorian brick and stucco terraces. It consists of fifteen individual blocks and a primary school in concrete, steel, brick and glazed tile in a late modernist style, now listed Grade II*.

The estate was specifically designed so as to retain as many of the original Plane trees from the Victorian streets as possible, and was intended to realise Le Corbusier's vision of 'a city in a park'. Other tree species associated with the redevelopment of the area include magnolia and mountain ash - appropriate, visually interesting and functional species.

Photos

Planting around a square in Churchill Gardens: The spare, formal rows of trees complement the minimal detailing of the building behind and the height of the trees remain subordinate to the flat block.

Trees and Shrubs in Lillington Gardens: A wide variety of colours, sizes and forms complements the informal architecture of the estate

14	Moderation	Planned estates of high architectural quality
Planting principles	1. Respect the original design intent. Unlike other, more historic, parts of Westminster where buildings and planting have built up gradually over time - and often independently of each other - the planting on many estates will still be original, and may well have been designed by the architect to form a unified composition. New planting on estates, and particularly those which are in conservation areas, should understand and reflect the spirit of the original schemes - though need not lavishly reproduce original species lists or planting locations if, for example, it has become clear that the space is actually being used in ways that were not originally intended 2. The residential communities of these estates should be at the heart of decision making about new planting. They will have detailed local knowledge and insights about the way spaces are used. 3. As in other areas, planting on estates should respect the scale, form, and materials of the architecture and open spaces. In other words it should understand its setting and its contribution to the public realm. The contribution of trees to the estate should be maximised, and potential problems such as loss of light or sticky sap anticipated so that they can be minimised.	

15	Caution	West Marylebone

History

Development north of Oxford Street was largely planned and built in the early 19th Century, and resulted from the laying out of several settled estates; the Portman Estate, the Portland Estate and the Audley Estate. The Georgian core of each estate is characterised by large scale domestic buildings fronting directly onto broad streets. The planned layout included some squares surrounded by more prestigious buildings, often in conjunction with grander terraces with planting.

Later, Victorian development has largely occurred piecemeal, with the redevelopment of individual plots. This phase of development tends to the imaginative, with generous use of decorative terracotta, polychromy, and architecturally integrated sculpture.

Urban character

West Marylebone primarily comprises the Portman Estate and Harley Street Conservation Areas and also a number of other small areas of slightly varying character. The typical Georgian form of development is the part stucco, yellow stock brick terrace house, rarely exceeding six storeys. This form of development has survived well throughout the areas, creating a restrained and elegant background to some of the larger set pieces.

The Portman Estate and Harley Street Conservation Areas are both centred on formal grid like street plans, with squares formed in place of occasional street blocks. The most significant such squares in this character area are Bryanston, Montagu, Portman, Manchester, and Cavendish Squares.

Trees

The streets of this area is similar to that of Mayfair and St James's with the original intention being deliberately hard and largely treeless. However, some of the broader streets have some potential for greater flexibility. Although never intended to become boulevards, Portland Place, Gloucester Place, Devonshire Place, Great Cumberland Place are able to satisfactorily accommodate planting and now have an important greening function in this dense urban area. London plane is the principal species used in the squares.

There may also be some areas within Portman Estate where additional street tree planting may be accommodated. For example Seymour Place, north of Upper Berkeley Street, is such a street, as is Dorset Street and George Street (east of Gloucester Place). It would be preferable that ginkgos and privet in some of these areas be succeeded by other deciduous species if location is appropriate.

There may be further opportunities, particularly on some side streets where there is enough space to accommodate street trees and in a planned, coordinated way, taking account of townscape and access considerations. Each opportunity will be assessed on its own merits.

The limited amount of planting concentrated in the north of Harley Street Conservation Area should not be extended throughout the rest of this conservation area as a general rule, whilst also taking account of the points made above.

The formal squares in this Townscape Area are of the highest importance in urban design terms. They were designed as an integral part of the various phases of development and demonstrate the principles of the earliest phase of town planning. They remain important today as green oases, providing both visual and recreational amenity in the area. In the Portman Estate, the garden squares are of particular historic significance as they form part of the original planting schemes

15	Caution	West Marylebone

Planting principles

1. Preservation of the historic townscape is very important in this area. Where largely uninterrupted streets of Georgian and/or Victorian architecture exist these should be retained as far as possible as fine examples of their type. However, opportunities for tree planting in this area may be possible as part of a planned and coordinated scheme, where the historic fabric is already eroded through infill developments or other modern interventions and taking account of all the other planting principles outlined in this document.
2. The greening function of trees on the broadest routes through this dense urban area should be maintained. Although where pavement width allows, there is no in principle objection to further planting in broader streets such as Portland Place and Baker Street and as part of a comprehensive scheme.
3. The character of formal squares in this area should be retained by careful management and succession, and by retaining the absence of trees in the squares' tributary streets.
4. The intricate and interesting architectural details used on Victorian development throughout the area should not be obscured by trees.

Photos

Harley Street (sourced from Google Street View)

Upper Montagu Street (sourced from Google Street View)

16	Caution	East Marylebone

History

St Marylebone became part of the newly fashionable West End of London in the second half of the 18th century, changing the rural picture of a few houses fronting onto Oxford Street into a totally urban one. By the beginning of the 19th century the street pattern and development of East Marylebone was virtually complete, with the main parallel north/south streets crossed by secondary east/west streets.

From the mid-19th century changes in tastes and need were reflected in re-developments, particularly during the Victorian period when many of the original buildings were demolished and plain Georgian terrace fronts south of Marylebone Road began to be replaced by a more eclectic range of styles. Many corner sites were also redeveloped at this time and this resulted in a diverse and elegant street scene featuring a rich variety of late Victorian and Edwardian street frontages.

Urban character

East Marylebone has a predominantly urban character with few trees or green open spaces. Its rich mix of building types for various uses and united by robust Edwardian architecture of a substantial scale with vibrant brick and intricate friezes.

Trees

There are no squares or major public spaces in this area. Street trees are located at street junctions in the more residential northern half of the area, which provide welcome interjections in the hard townscape without obscuring the character of the place, or they provide a welcome cloak to some uninspiring architecture. In other locations they are incongruous with the scale of the buildings and available space in the street, and damage the character of this hard urban place.

The predominantly narrow streets, detailing of the architecture and distinct sense of place should be respected, and its streets, generally, left unobscured by trees.

Photos

A hard, treeless streetscape.

East Titchfield Street (sourced from Google Street View)

16	Caution	East Marylebone
Planting principles	1. Preservation of the historic townscape is very important in this area. Where largely uninterrupted streets of historic architecture exist, these should be retained as far as possible as fine examples of their type, acknowledging the original design intention of no street trees. However, opportunities for tree planting in this area may be possible as part of a planned and coordinated scheme particularly at spacious junctions, and/or where the historic fabric is already eroded through infill developments or other modern interventions and taking account of all the other planting principles outlined in this document.. 2. There are a number of later developments, such as Middlesex Hospital, the back of the BBC, and some later residential blocks that would benefit from new planting as part of a designed scheme.	

17	Caution	Mayfair and St James's

History

The 17th and 18th century street pattern is central to the character of this area, with separate phases of development identifiable from the differing alignment of street grids centred on St James's Square, Grosvenor Square and Berkeley Square respectively. Building ages begin with early Georgian, and three major waves of redevelopment since this time characterise Mayfair and St James': mid 19th century stucco, late 19th century Queen Anne / Arts and Crafts, and mid 20th century neo-Georgian. Plot patterns throughout the area tend to the narrow, and building heights to domestic, and it is these tightly packed domestic scale buildings which form the background character of the Townscape area. Larger buildings are restricted to Park Lane, Piccadilly, Berkeley Square, Hanover Square and the fringes of St James's.

Trees

Following conventional seventeenth/eighteenth century practice, there are very few street trees in Mayfair and St James's. The street tree was largely a Victorian innovation; the Georgian model saw planting provided within garden squares, or on private land. As such, hard streetscapes are characteristic of this part of Westminster.

Such planting is provided in abundance in the St James's and Mayfair Conservation Areas; Waterloo Gardens, Carlton Gardens and St James's, Grosvenor, Berkeley and Hanover Squares are crucial to the character of the area. These squares and gardens are densely planted with large mature London Plane trees, as well as with smaller, ornamental species. As well as providing amenity to the squares themselves, in each case the trees provide a termination to views along adjacent streets.

The trees in Grosvenor Square in particular are visible in views up Carlos Place and other radiating streets; each of the corners of the square, as well as the central enclosure, has been generously planted

Other 'glimpses' of trees within the character area are also important, particularly of where park trees form the conservation area boundary. Views to the dense planting on Park Lane, The Mall and Green Park help to orientate the pedestrian in the townscape, and provide a welcome contrast to the otherwise very hard street environment.

Also of great importance in this Townscape Area is the contribution made to the public realm by planting in private spaces. Properties with gardens abutting Marlborough Road, The Mall and Queens Walk in particular have high garden walls, behind which can be seen tall trees and large shrubs that all contribute positively to the street scene without occupying valuable pavement space.

Mayfair and St. James's both have churchyards, or former churchyards, where planting makes a contribution to the public realm. The Churchyard of St James in Piccadilly contains an ancient Indian Bean Tree, one of the "Great Trees" of Westminster, along with a number of tall Plane Trees. The former Churchyard at Mount Street Gardens is abundantly planted with Planes and other species, including some examples of memorial trees.

Planting principles	1. In general, new street trees should not be planted, although some exception may be made for plantings amongst unremarkable interwar architecture (where part of comprehensive planting scheme) or side streets where appropriate. 2. The squares of Mayfair and St James's are well planted, each has a distinct character formed from the relationship between the architectural form and the tree species planted. They form an essential component of the character of the area. Preservation of this character should be the principal aim of new planting in the area. 3. London Plane is the principal tree species used, although other, smaller trees are also used, often around square perimeters. Diversity should be pursued and deciduous species other than the Plane should be considered with a view to adding visual interest with colour and shape at differing sizes including those at a forest scale.

17	Caution	Mayfair and St James's

Photos

St James's Square, showing mature Plane trees and well as smaller trees, such as a Fig (right).

Carlos Place looking to Grosvenor Square – planned urban streets interspersed with heavily planted garden squares

Marlborough House from Marlborough Road illustrating the contribution private trees can make to the public realm

The Church of St James, Piccadilly, with Plane trees visible from Jermyn Street (left); Mount Street Gardens, Mayfair, a green oasis where diverse planting provides visual interest (right).

18	Caution	Soho and Covent Garden

History

Covent Garden Piazza was developed in the early 17th century although the surrounding streets have much earlier origins. Soho has its origins in the late 17th century, as London expanded west from the City of London. By the end of the 17th century both conservation areas were largely built up – though little remains today of the original fabric.

In terms of its street plan, the Soho Conservation Area can be neatly divided into the original seventeenth and eighteenth century layout and the Victorian intrusions of Shaftesbury Avenue and Charing Cross Road (1880s). In each of the conservation areas Victorian and later development was of a larger scale, resulting in a very mixed collection of building sizes and styles. Nonetheless it is from the small plot size, and from the narrow streets that the area takes its character.

Urban character

The character of Soho, Covent Garden and Leicester Square is united by more than similarity in historical development and architectural form. The uses of these areas, and specifically their forming the heart of the West End creates both a further layer of townscape character, and heavy footfall in narrow footways

Much of the area's character derives from its intimate routes and spaces, with small courts and very narrower streets. These sometimes labyrinthine street pattern adds to an, at times, louche and edgy feel. In many cases these form part of a pedestrian network which allows east/west movement across the area.

Primary routes define the edges to the Conservation Area: Charing Cross Road, Strand and Oxford Street, are busy thoroughfares with a quite different character. Shaftesbury Avenue in particular has a number of tall blocks with commercial premises on the ground floor and apartments or offices above. These buildings are on a larger scale than those in the older streets to north and south. On the north side of Shaftesbury Avenue is a concentration of late Victorian theatres, and the street is generally recognised as the heart of London's Theatreland.

Central to the character of East Soho are the three parallel streets dating from the pre-Georgian development of the area: Dean, Greek and Frith Streets. In Covent Garden King and Henrietta Streets and Maiden Lane also preserve the early street pattern. The small plot sizes and comparatively narrow widths of these streets are interspersed with occasional squares – Soho Square, Golden Square, Leicester Square.

It should be noted that City Council is currently identifying a number of opportunities for making areas of Soho more environmentally friendly through a study entitled *Retrofitting Soho – Improving the Sustainability of Historic Core Areas*. Opportunities include the installation of a district-wide heating and power system, new initiatives which reward green landlords and tenants and the adaptation of flat and sloping roofs to solar panels.

Trees

Trees in this townscape area are few. Planting is mainly restricted to the squares and occasional surviving churchyards but these are few and far between and much of the area falls within an area of open space deficiency (as detailed in Westminster's Open Space Strategy). Leicester Square, and Soho Square are both planted with large Plane trees, while Golden Square has some mature Hornbeams.

Trees have been planted along Broadwick, Marshall, Carnaby and Lexington Streets in recent times. These are four of the only such streets in the West End, but nevertheless, are not entirely appropriate due to the historic setting together with access restrictions and they should not be seen as justifying further planting of this kind.

St Paul's in Covent Garden Churchyard has mature Ailanthus and Indian Bean Trees, and St Anne's Churchyard in Soho is bounded by large Plane trees, and these are entirely appropriate.

The multiple entertainment uses in this part of Westminster also present an obstacle to the planting of new trees in the public realm which must be handled with care.

18	Caution	Soho and Covent Garden

Photos

An aerial photograph of Soho shows how Soho retains its integrity with a tight urban grain and small plot sizes and narrow streets. The trees visible are in Soho Square – as intended.

Maiden Lane, Covent Garden: Narrow footways such as this are not generally suitable for trees.

Planting principles

1. The character of this townscape area is derived in part from its dense development and narrow streets, which made the inclusion of trees difficult or impossible. The almost total absence of planting underlines its deliberately 'dry' urban appearance and is one of the characteristics that the City Council is seeks to preserve in those areas
2. Avenues of trees, including in front of refurbished or redeveloped buildings, is an inappropriate form of planting in this area due to the historic character of the area and there will be a presumption against it.
3. Whilst rare, some single landmark trees exist, often at road junctions. All trees in this quarter each require careful consideration when thought is given to succession. However these landmark trees should generally be replaced unless they caused amenity problems.
4. There may be an opportunity for further greening of Golden Square – the extensive hard landscaping, dating from 1952 but retaining the concrete air raid shelter, does not contribute to the historic purpose of city squares and should be removed – to provide an enhanced green haven in the 17th century street pattern.
5. Covent Garden Piazza is not an appropriate location for new planting. Its hard surfaces, wide open space and lack of greenery are an essential part of its character. The piazza, modelled on renaissance cities in Italy and the first attempt at formal town planning in London, was intended as a clean, unbroken space, with the architecture and formal layout as the focus of the townscape.
6. Some opportunities for planting exist along Charing Cross Road. However, careful consideration should be paid to the heavy pedestrian footfall and pavement space available.

19	Caution	Smith Square

History

The former Church of St John the Evangelist was completed in 1728 and the street plan that was established shortly thereafter remains largely intact. Significant residential development began to take place within this street layout in the following century.

Many domestic buildings were replaced with larger commercial or office buildings at the start of the twentieth century. The northern end of Tufton Street, the river frontage along Millbank and the south and east sides of Smith Square were all redeveloped between the end of the nineteenth century and the start of the Second World War. These buildings represent the last significant phase of development within this area.

Urban character

Given the prominence and importance of St Johns as a landmark and the larger scale of the buildings around the square, Smith Square is identified as a primary space. Primary routes also define the edges of the area and are busy traffic arteries. However, most routes are more enclosed and the area has a quiet and intimate atmosphere.

All of the buildings in Smith Square are characterised by high quality traditional materials and fine craftsmanship. Brick and Portland stone dominate the area, although there is some stucco. The 18th century houses are typified by Flemish bond brown brickwork, which contrasts dramatically with the Portland stone ashlar masonry of St John's Church. Many of the 20th century buildings are constructed in fine hand made red and brown bricks in a variety of bonds with stone dressings.

Trees

Smith Square contains a number of Plane trees, though the gradual shrinking of the square as development encroached ever further on the open space during the eighteenth and nineteenth centuries has left it a hard landscape.

The gardens surrounding St John's Church provide a welcome green space in the conservation area, softening the predominantly hard landscape. Mature London Plane trees in and around the church includes species such as magnolia and mulberry, and provide added visual interest.

Short avenues of London Planes such as those on Dean Trench Street and Dean Bradley Street frame views out of the Square and continue the verdant appearance of the surrounding streets.

More recent street tree planting is becoming established within the conservation area, such as recently planted pear trees on Tufton Street. These trees help to soften the strong building line and create a visual link to St John's Garden in the south. Within the private realm, a protected London Plane and golden false acacia at the rear of Cowley Street are clearly visible for a considerable length of Great Peter Street, and serve as a focal point in views up and down the street.

Trees outside the conservation area such as those in St John's Gardens serve to define the boundaries of the conservation area in views along Great Peter Street and Tufton Street. The visual impact of these plantings is fundamental in defining the character of the area.

19	Caution	Smith Square

Planting principles

1. As discussed above, the existing trees in and around Smith Square area contribute significantly to the character of the area. In this respect, the replacement of existing trees with compatible species is generally welcomed.
2. However, there is little scope for additional plantings. The narrow, intimate streets throughout the area cannot support additional trees without detracting from the architectural character and pedestrian accessibility.

Photos

Dean Trench Street (sourced from Google Street View)

Tufton Street (sourced from Google Street View)

20	Caution	Regent Street

History

Regent Street is one of the most important examples of town planning in the country. First laid out by John Nash in the early 19th century, it provides a processional route from Regent's park in the north to Carlton House in the south (the present site of Carlton House Terrace). Regent Street was rebuilt in Beaux Arts style between 1898 and 1930, after the early 19th century buildings on the street became unfashionable towards the end of the 19th century.

There are 28 listed buildings on Regent Street, and four for Piccadilly Circus. These cover almost all the buildings on Regent Street, and include items of historic street furniture and public art.

Urban character

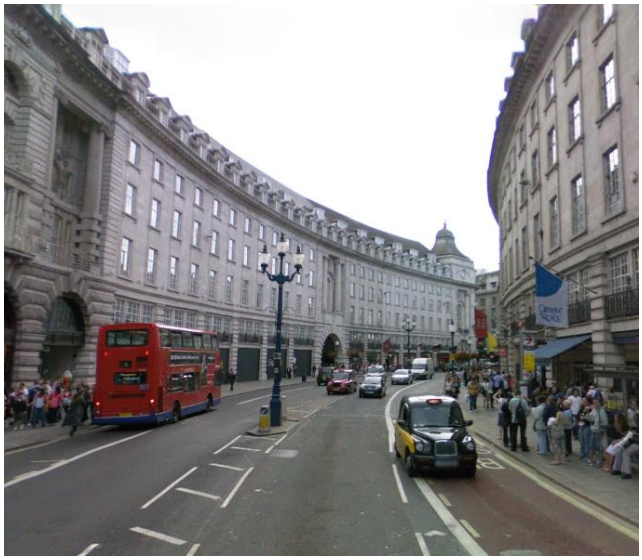
Regent Street is remarkable for its high degree of uniformity in terms of architectural style, materials and scale. With the exception of original shopfronts, the exteriors of most of the buildings have survived virtually unaltered since they were erected. Where shopfronts have survived, they are usually of high quality, reflecting the prestigious image of the Street.

The character of Regent Street is dictated by its retail use at ground floor level with discreet entrances to suites of offices above. These office entrances are frequently associated with small retail units which form an important feature in the street.

Trees

There are no trees in Regent Street and very few in its surrounds.

Photos



Regent Street (sourced from Google Street View)

Glasshouse Street (sourced from Google Street View)

Planting principles	1.	Regent Street has a hard urban character and is of significant historic importance. Street trees are not appropriate in this area.

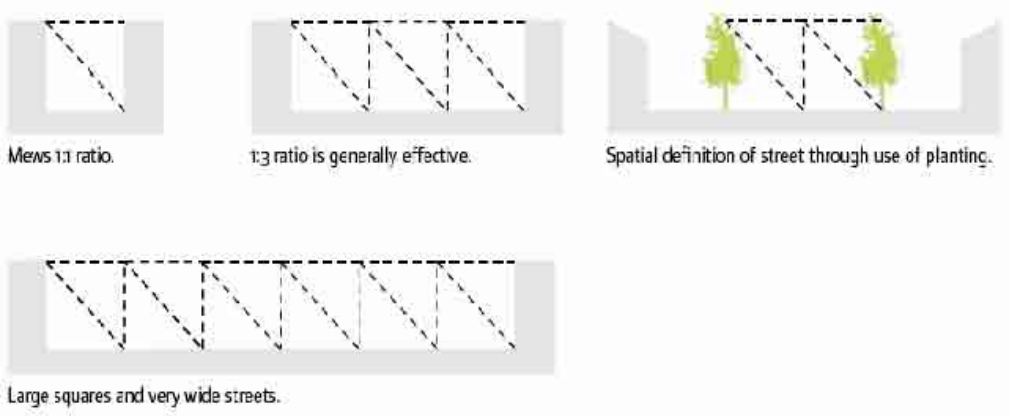
APPENDIX C
MINIMUM STREETSCAPE STANDARDS FOR TREE PLANTING

Height to width ratios

The basic urban design principles can be found in the Department for Transport's publication, *Manual for Streets (2007).* The public realm is defined by height as well as width – or, more accurately, the ratio of height to width. This is ascertained by taking the height of the building as it is perceived by users of the street - the illustration below shows a couple of examples. The width of the street should be measured from façade to façade in the widest and narrowest points, and an average taken.

Spatial definition by building height. Spatial definition by recess line.

The height of buildings (or trees where present in wider streets) is in proportion to the width of the intervening public space (1:2) to achieve a comfortable sense of enclosure. This is a fundamental urban design principle. The actual ratio depends on the type of street or open space. The height-to-width enclosure ratio illustrated below serves as a guide.



Mews 1:1 ratio. 1:3 ratio is generally effective. Spatial definition of street through use of planting.

Large squares and very wide streets.

	Maximum	Minimum
Minor streets, e.g. mews	1:1.5	1:1
Typical streets	1:3	1:1.5
Squares	1:6	1:4

These required minimums are very useful when planning the development of large sites, with new streets, but Westminster has few areas where such development is likely to occur in the short or medium term. Many of our existing streets were not designed to modern standards, and there is simply insufficient width to provide a minimum of 2m clear for pedestrians. Nevertheless, this is our aim, balanced against the benefits of providing street trees, in order to avoid not only inconvenience, but danger that can occur by encouraging stepping into the carriageway.

Where this is not practical, we revert to The DfT's *Inclusive Mobility*, which states:

> *"A clear width of 2m allows two wheelchairs to pass one another comfortably. This should be regarded as the minimum under normal circumstances. Where this is not possible because of physical constraints 1.5m could be regarded as the minimum acceptable under most circumstances, giving sufficient space for a wheelchair user and a walker to pass one another. The absolute minimum, where there is an obstacle, should be 1m clear space. The maximum length of restricted width should be 6 metres. If there are local restrictions or obstacles causing this sort of reduction in width they should be grouped in a logical and regular pattern to assist visually impaired people.*
>
> *It is also recommended that there should be minimum widths of 3m at bus stops and 3.5m to 4.5m by shops though it is recognized that available space will not always be sufficient to achieve these dimensions."*

Trees therefore will never be planted in the footway when the tree (taking account of any expected incremental enlargement of the trunk) is likely to reduce pedestrian clearances to less than 1m. The tree pit itself cannot be included in the measurement of clear width unless the surface is useable by a wheelchair. If resin-bound aggregate is used as a pit surface, then it can be classed as clear width, otherwise the measurement must be taken from the edge of the pit to the edge of the public highway (not necessarily the building façade).

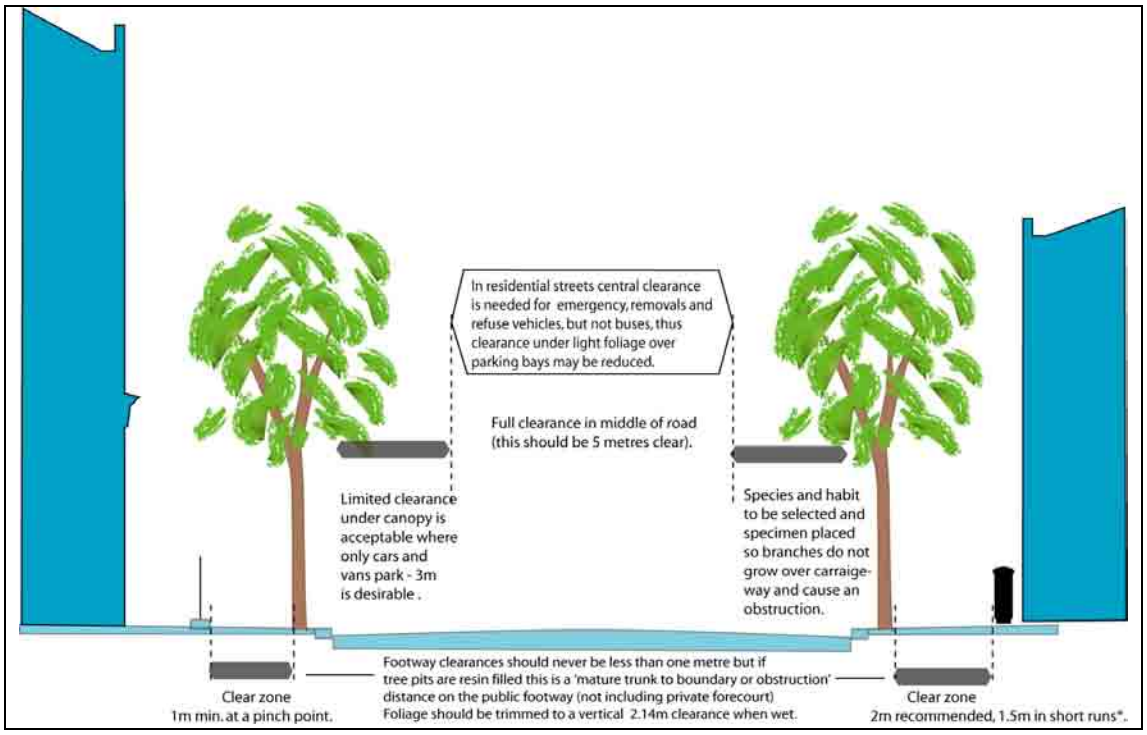
Trees should not obstruct pedestrian sightlines. In general driver sightlines also need to be maintained, although avenue planting can be used as a tool to increase perceptions of speed and thereby limiting traffic speeds.

New planting should consider the function of existing street furniture such as street lights and CCTV cameras, as foliage can block lights and images. Tree planting should respect these primary functions, and where street furniture cannot be relocated, the location of planting should be reconsidered.

Over the page are the arrangements found in typical streets in Westminster, and where trees could be planted within them. Further detail can be found in the Westminster Way public realm manual.

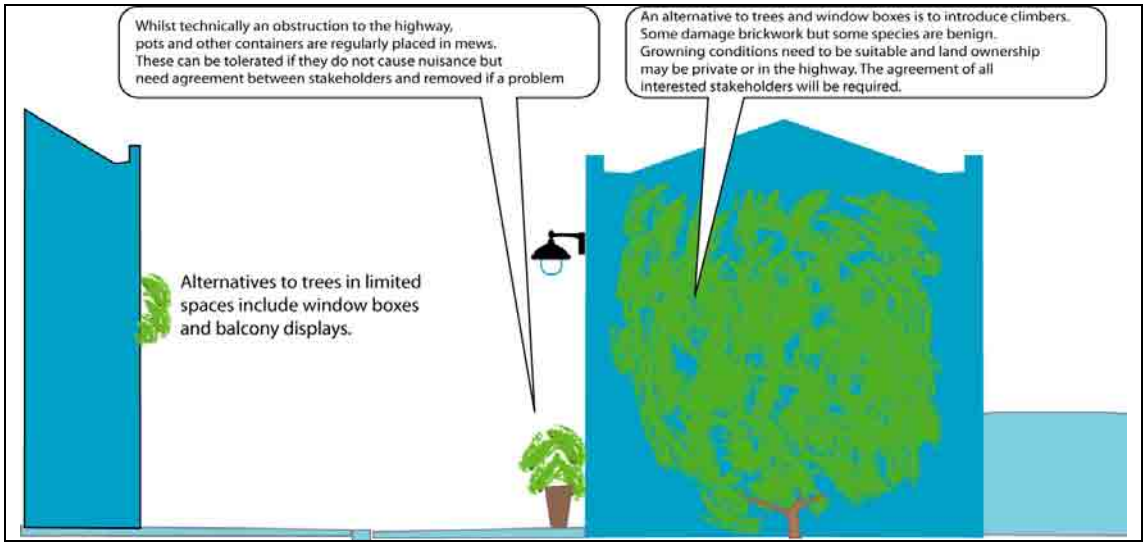
When choosing a specific location in these streets an important consideration is how content the tree will be. This includes how close to its natural proportions can it grow (it should be able to grow to at least look 'natural'), and what will it contribute to, or harm, in the street scene when fully grown, for example shade, pedestrian impediment, colour, obstruction of views or important buildings, or habitat for particular fauna.

The ability of the tree to co-exist alongside services is a crucial factor. The size of the space available above and below ground will be a key factor in species choice. Pit dimensions should provide the tree with as much space to become established as far as is possible and practical given its location. New planting techniques have been developed to assist street tree planting where there are space limitations, as is the case in much of Westminster. Such techniques include the use of root barriers, or specially formulated topsoil allowing the creation of larger planting pits, essential for the planting of what could become a characterful tree. Detailed advice on this issue is contained in *Tree Roots in the Built Environment* (June 2006 - References in Appendix H).



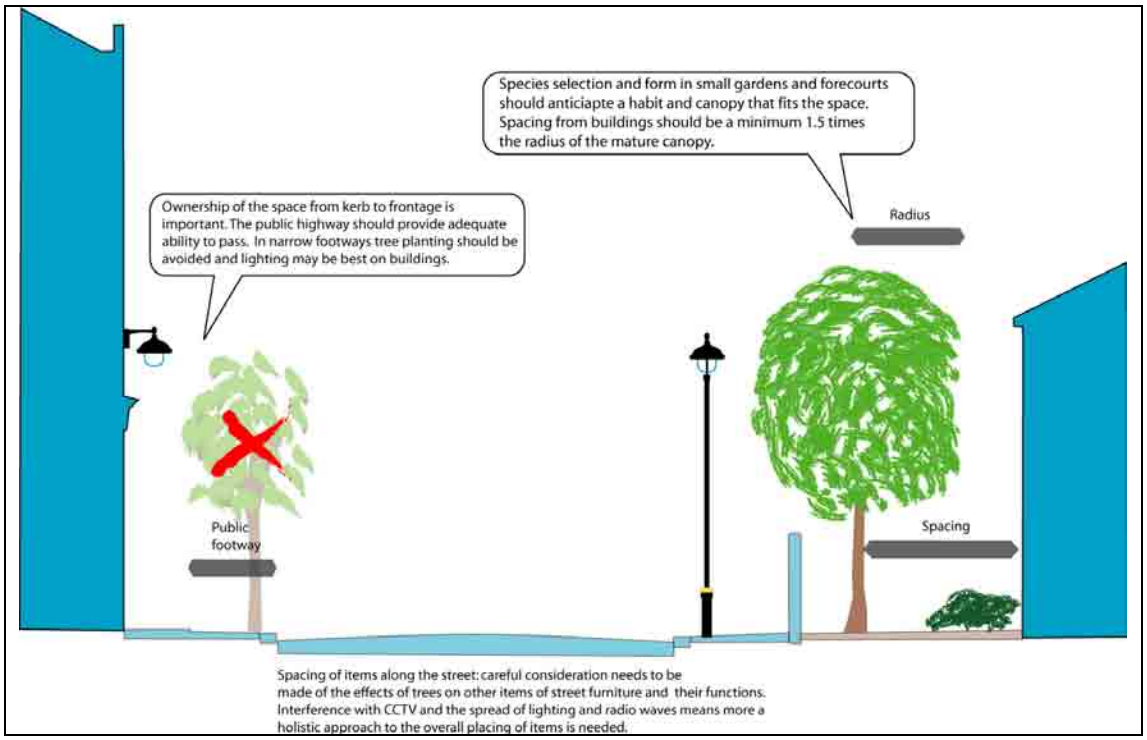
Residential streets with low footfalls

The footway clear zones should be 2m. 1.5m is the minimum where 2 or more obstructions are located adjacent to each other. **1m is the absolute minimum width for a single pinch point,** measured from the maximum anticipated trunk size, and only public highway can be included in the measurement.



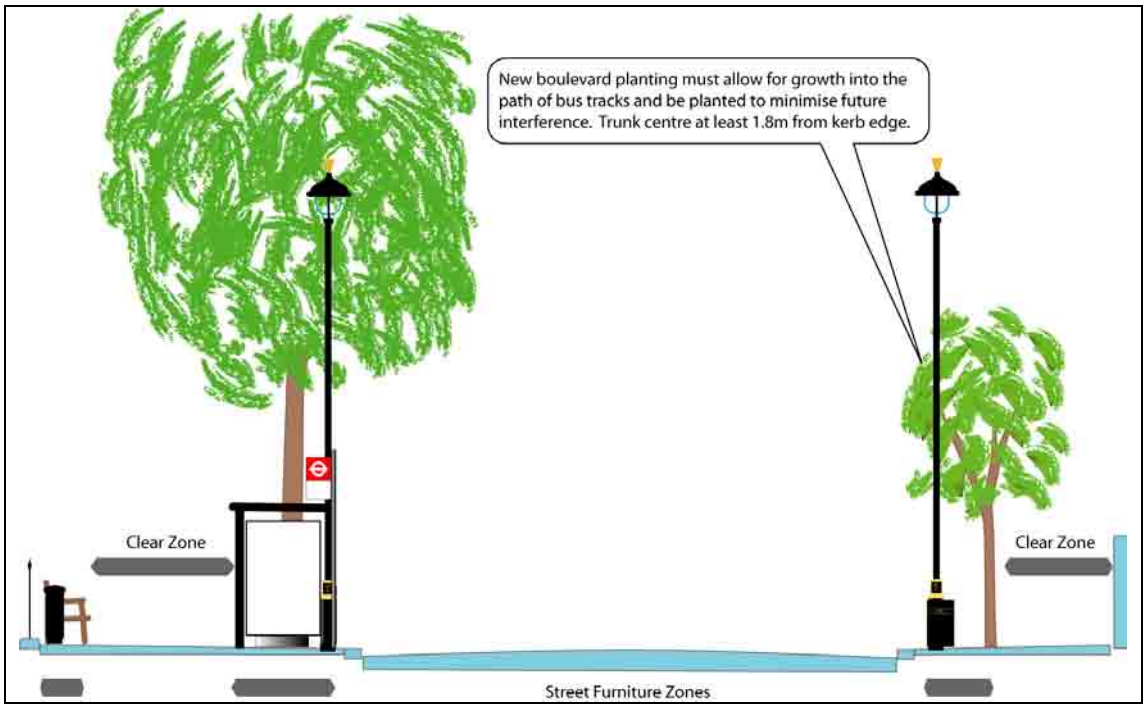
Mews & shared-surface courts

Mews are generally unsuitable for tree planting, but climbers, window boxes and pot plants can add welcome greenery



Narrow footways or streets with front gardens

Trees in front gardens make a valuable contribution to the street, but careful consideration should be given to its size when fully grown. Planting in narrow footways will be avoided.



Wide urban boulevards

Trees should always be planted in the street furniture zone, and pay careful attention to potential growth and obstruction of high-sided vehicles

APPENDIX D
COMMONLY USED SPECIES IN WESTMINSTER

Choice of species is crucial to the provision of a healthy tree that is appropriate to both a local sense of place and its intended function, with space to grow to maturity with minimal intervention or management. Council's arboriculturalists are best placed to advise on what species are appropriate however there are also a number of sources which can provide information in this respect. These sources include specialist publications, private nursery catalogues and also some good websites such as the following:

- Greater London Authority, Right Trees for a Changing Climate.
  http://www.right-trees.org.uk
- Royal Horticultural Society
  http://www.rhs.org.uk/databases/summary.asp

To illustrate some of the considerations associated with tree selection, a selection of some of the most common trees used in Westminster are listed below. These species have varying relationships with environment (in particular air quality) which needs to be carefully considered in relation to the nature of the site and surrounds[1].

Large round trees (over 15m, height and spread approximately equal)

► Norway Maple (*Acer Platanoides*)

Sturdy tree of large proportions forming thick rounded crown with widely spaced branches. Suitable for parks and wide avenues. This species is not sensitive to nitrogen oxides and is very effective in absorbing them.

► Common Ash (*Fraxinus excelsior*)

A native with a wide to oval shaped crown. It is suitable for parks and wide avenues and, if given the room to grow and spread, the common ash forms a very striking specimen tree. Since they need plenty of light, they can easily be crowded out by other overshadowing trees. This species is particularly effective for reducing ozone concentration in urban areas.

► London Plane (*Platanus x hispanica*)

In addition to being fast-growing, the London Place is very tolerant of hard surfaces, vigorous pruning, atmospheric pollution and root compaction. For these reasons it is a popular urban tree, however it does have some drawbacks in an urban setting – most notably the hairs shed by the young leaves and the dispersing seeds in spring which can both be an irritant if breathed in. The large leaves are also tough and can create a disposal problem. Furthermore, like some other large, broad-leaved species London Planes can potentially contain pollutants from traffic – particularly as their growth can tend towards the centre of the road.

The Council recognises that, given its mature size, the London Plane is best suited to parks and broad streets where avenues will have replacements of the same species. In other more domestic scaled streets it can either grow too large for its setting or has to be heavily pollarded in order to remain without causing problems for buildings in close proximity.

► Small leaved lime (*Tilia cordata*)

A native to British Isles and large parts of Europe. Slow growing but produces large rounded canopy. Long-lived. Tolerant of most soils and hard surfaces. Suitable for parks and woodlands. Many cultivars available with compact pyramidal shaped crowns suitable for street planting.

1 Many of the details on the trees interaction with air quality in this appendix have been sourced from Plant Publicity Holland, 2008.

Medium round trees (between 9 and 15m, height and spread approximately equal)

- Field Maple (*Acer campestre*)

  The only native maple to the British Isles, Field Maple has an irregularly shaped crown with small leaves on irregularly spaced branches. It can reach 25m, but often only 10-15m in urban environments. It is tolerant of any soil and hard surfaces, making it very suitable for urban streets.

- Common Hornbeam (*Carpinus betulus*)

  Common Hornbeam is indigenous to the south of England and prevalent in the forests that once surrounded London. In it's fastigiated form it represents an ideal street tree, being columnar and compact (although growing up to 30m in height in unrestricted locations). It is also a tough tree tolerating pollution and compacted soils. Slow growing and densely branched, it produces rounded crown when mature. It bears fruits which in no way resemble those borne by any other British tree and grow in clusters that hang in long tassels during April and May.

- Swedish Whitebeam (*Sorbus intermedia*)

  Swedish Whitebeam has a densely branched pyramidal shaped crown which broadens with age. It produces conspicuous white spring flowers followed in autumn by clusters of red spherical fruits. Swedish Whitebeam tolerates dry soils and hard surfaces and is suitable for parks and streets

Small round trees (less than 9m, height and spread approximately equal)

- Snowy Mespilus (*Amelanchier 'Lamarckii*)

  Snowy Mespilus has a vase-shaped crown comprised of fine branches and produces attractive small white flowers in spring with a reliable autumn colour. It is tolerant of most soils and hard surfaces and is suitable for small gardens and streets where space is limited.

- Common Hawthorn (*Crataegus monogyna*)

  This is a small native thorny shrub up to 10m in height, with a broad spreading compact crown of congested branches. It is not invasive and its adaptability has given rise to around 35 different species of Hawthorn which flourish in a range of soils. Common Hawthorn has fragrant white flowers in May, and deep red fruits which attract wildlife. This species Tolerates most soils and urban conditions and is particularly effective for reducing ozone concentration in urban areas.

- Crab apple (*Malus 'Liset'*)

  Round shaped crown of dense purple leaves. Tolerant of most soils just one of the many apple cultivars that can be selected from a wide range of crown shapes, flower size and colour.

Large columner trees (over 15m, height greater than spread)

- False acacia (*Robinia pseudoacacia*)

  A Fast growing tree with an irregular oval to rounded crown, False acacia has widely spaced branches which cast light shade. It is tolerant of most soils and copes well with dry conditions and is suitable for parks, streets and large gardens.

- Tulip Tree (*Liriodendron tulipifera*)

  A fast growing tree with straight central trunk, the Tulip Tree has crown which broadens significantly with age. It is tolerant of all soils and hard surfaces and is effective at absorbing nitrogen oxides and ozone. Suitable for parks, avenue and specimen planting.

- Dawn Redwood (*Metasequoia glypostroboides*)

  Although non-native, the Redwood is praised for its attractive conical form and is regarded as a clean tree as it produces negligible leaf litter. It is a fast-growing deciduous conifer with a narrow pyramidal crown when young which broadens with age. It is tolerant of most soils and hard surfaces and is suitable for parks, avenue planting (where space permits), and as specimen tree.

- Italian Alder (*Alnus cordata*)

  Related to the birch, the Alder is a hardy tree and disease resistant. Alders grow in symbiosis with certain bacteria (Actinomycetes) which absorb Nitrogen from the air. These organisms live in the roots and their presence actively improves soil fertility. It is tolerant of most soils however as its robust surface roots can disrupt hard surfaces, it is more suitable for parks and soft landscape areas.

Medium columner trees (between 9 and 15m, height greater than spread)

- Silver Birch (*Betula pendula*)

  Quick growing and oval crowned, the Birch tolerates a wide range of conditions and is widespread in parks and along roadsides. There are around 40 species of Birch, which can most easily be recognised by their bark and light foliage, but only two are considered indigenous. Birch does not require pruning, will grow where the soil is poor and thin, and is quite drought tolerant but has a limited life expectancy of 30-40 years and is not suited to compacted soils due to its shallow, fine roots.

- Sweet Gum (*Liquidambar styraciflua)*

  Sweet Gum has a narrow pyramidal shaped crown when young which broadens with age. It has a central straight trunk which persists to the full height of the canopy. This species is tolerant of most soils and hard surfaces and is effective at absorbing nitrogen oxides and ozone. Suitable for avenue, street and landscape planting.

- Small Leaved Lime (*Tilia cordata*)

  Small Leaved Lime is a round headed tree which has a dense canopy of heart-shaped leaves. It is tolerant of hard surfaces and dry soils and is and is effective at absorbing nitrogen oxides and ozone. Notably, it is not particularly prone to aphids – which can be a problem with some limes. Mainly suitable for avenues and streets.

- Turkish Hazel (*Corylus colurna*)

  This species has a pyramidal-shaped crown formed from lateral branches arising from a central leading trunk which rises the full height of the canopy. Turkish Hazel is tolerant of hard surfaces and drought conditions and is generally pest and disease free. Suitable for avenue and street planting.

- Maidenhair Tree (*Gingko biloba*)

  This is a unique tree in that it does not fit neatly into either conifer or broad leaf categories. Maidenhair Tree is generally pyramidal in form but has very variable crown architecture and can either form a full form or appear quite awkward when sparse branches do not form a successful avenue. The male trees also have pollen-producing catkins, whilst female trees bear the foul smelling seeds, neither of which are desirable atributes.Positive characteristics of the Maidenhair Tree are that it tolerates pollution, compacted soils, is disease-resistant, doesn't have invasive roots, gives fair shade and requires minimum maintenance.

  This species is suitable in some circumstances, although can look ungainly and alien in period areas. It should also be used sparingly as a feature tree, largely as its variable crown form does not lend itself to avenue planting.

- Chanticleer Pear (*Pyrus calleryana*)

  Chanticleer Pear is a conical shaped, medium sized tree, with a crown formed of ascending fine branches producing pure white blossom. It is fast growing, and a good choice where space to spread laterally is limited. It is deep rooted, tolerant of pollution, most soils, hard surfaces, and even salt and is blight resistant. Chanticleer Pear is also effective at absorbing nitrogen oxides and ozone. Suitable for street and avenue planting

APPENDIX E
POLICY FRAMEWORK

There is much National policy guidance that is relevant, including PPS5, but this document lists only the local policy framework. All national guidance is freely available from government and organisation websites, including English Heritage.

Regional Policy

The Mayor of London has committed to planting more trees in London as part of mitigating the impact of climate change. Leading to a Greener London: An Environment Programme for the Capital (July 2009) contains predictions which indicate that average summer temperatures could be 3.9C higher in London by 2080. In response, this document suggests that an extra two million trees should be planted in London to combat rising temperatures over future decades as well as creating more green space and roofs. Notably, the Mayor promised to fund 10,000 extra trees in his election campaign – at the time of finalising this document 1,500 have been planted.

Underpinning this, the Mayor is firmly committed to maintaining and enhancing London's trees as a vital part of the environment of Greater London. The London Tree and Woodland Framework (March 2005) addresses the protection, management and enhancement of London's trees over the next 20 years and covers the spectrum of different townscape and landscape types from Community Forests on the outer fringe, to the very urban heart. The Framework seeks to ensure that:

- The existing stock of trees is managed and maintained to safeguard its value to London both now and in the future
- There is increased awareness of the value of trees to the health and well being of all Londoners
- The contribution of trees and woodlands to London's sustainability and quality of life is maximised
- Natural regeneration and new planting in appropriate locations is encouraged to further enhance the contribution of trees to London Life.

The four key aims to achieve the above general goals are:

- To ensure trees contribute to a high quality natural environment
- To help shape the built environment and new development in a way that strengthens the positive character and diversity of London
- Through people's contact with trees to help foster community and individual people's well-being and social inclusion
- To support the capital's economy.

The Framework shows that Westminster, even given its substantial parks, has one of the lowest tree densities in London, under 30 trees/ha. This is due to many factors, not least the organic, medieval street pattern in some parts of the city which is unsuited to the introduction of trees, the lack of woodland and the higher densities of development, resulting in less space for trees to be planted or establish themselves. A higher proportion of trees in Westminster are publicly owned though, given the lack of private open space, commensurate with those higher densities.

The Mayors framework recognises the importance of street trees, explaining that people in London will come into contact with them more often than trees planted in other locations, and that often they are the only significant vegetation growing in a street. It cites the benefits of street trees as including:

- Enhanced quality of life for those living and working in London through promoting a sense of well-being, and so health
- Increased privacy in residential roads through screening
- Increased local property values
- Historical importance – many of London's street trees are from Victorian design
- Linking areas of green space
- Filtering airbourne dust and pollution
- Reducing temperature extremes at street level
- Absorbing some traffic noise

The document also mentions certain negative aspects of street trees including:

- Remarkably limited variety – according to the London Tree Survey (1993) less than 10 species are commonly planted.
- Subsidence - although the perceived threat is much greater than the actual threat, with less than 1% of trees estimated to having been proven to have caused damage. Nevertheless claims can run into hundreds of thousands of pounds.

The existing London Plan• highlights opportunities for development proposals to enhance the natural environment and incorporate planting initiatives. The consultation draft replacement plan (October 2009) takes this one step further and mentions the Mayor's intent to produce "supplementary guidance on to guide each borough's production of "a Tree Strategy covering the audit, protection, planting and management of trees and woodland". The replacement plan also endorses the 'right tree right place' approach as taken in this document.

The London Economic Strategy recognises that economic development and regeneration must be supported and enabled by the creation, development or enhancement of town centres, parks and open spaces, and the importance of Londoners' health and links to air quality.

The London Biodiversity Strategy highlights the benefits of trees in enhancing local biodiversity, reducing noise transmission, helping to combat climate change (albeit on a minor scale), and improving air quality. It encourages the recognition of the economic and energy uses for woody material arising from managing street trees, and states that appropriate tree planting occurs in places that will not harm the built environment, infrastructure, or important existing wildlife habitat.

In seeking to build on London's diversity and create a prosperous, vibrant and healthy city, the key aims (for this guidance) of the Sustainable Development Framework for London are to build and sustain Londoners' sense of ownership, and to protect and improve the city's natural ecosystems, its biodiversity, its open spaces, and its built environment whilst using resources prudently, efficiently and effectively.

• As published February 2008 and consolidated with amendments since 2004.

The Mayor's Framework also looks to the boroughs to ensure that the role of trees is recognised and capitalised upon in every aspect of their economic, social and environmental development. Local Development Documents (LDD's) are mentioned alongside changes to planning and management systems as having potential to ensure that all contractors engaged in contract work will have to sign up to specifications produced by local authority officers. These specifications could include sustainability measures such as recycling through mandatory Timber Stations, ultimately seeking to achieve a zero-waste target.

Local Policy

The Core Strategy is the main DPD prepared by the council. It sets out the key elements of the planning framework for Westminster, for the next 15-20 years. It will include a spatial vision and strategic objectives for the area, a spatial strategy, and a monitoring and implementation framework for achieving the spatial vision. It reinforces the need for open space in the city and ways in which to address air quality.

The City Council's own policies are currently contained in its Unitary Development Plan (2007), to be replaced by its new Local Development Framework in due course. The most relevant current policies in the UDP to this document are:

- Policy DES 7: Townscape Management
- Policy ENV 16: Trees And Shrubs
- Policy STRA 7: Planning Obligations And Benefits

The wording of these polices recognises:

- that trees can provide a natural scale to buildings and streets; reflect the changing seasons and give a psychological link to the countryside; bring visual beauty to cities; block ugly views and soften glare from reflective building surfaces; provide shade; act as wind breaks; can filter out a great deal of dust, pollutants and even viruses; and provide valuable screening for residents;
- most are of similar age, meaning they are reaching maturity en masse (88% are 'mature');
- there is a need to selectively remove old trees to make space for young replacements;
- the council aims to increase the diversity of tree species and reduce reliance on the London Plane;
- that there are a small number of historic streets which were laid out and designed in order to create long vistas and which would not benefit from tree planting. Respect for the traditional streetscape is required, and greening should instead be in the form of window boxes and small potted shrubs; and
- that environmental improvements including repaving footways, and landscaping/tree planting on the highway might be acceptable benefits to provide or contribute towards as part of Section 106.

The City of Westminster Open Space Strategy (February 2007) is a strategy to improve the quality, management, accessibility and usage of parks and other open spaces in the City, and provide new facilities

The Core Strategy is being produced in a number of stages; with a Submission Draft to be prepared following consultation on the Preferred Options and with a view to final adoption in late 2010/early 2011.

where there are deficits in provision. This strategy aims to maintain and increase the amount of wildlife habitat and biodiversity in the city. It also seeks to ensure that new developments contribute to Westminster's open space network, by providing new open spaces (both public and private) and enhance existing spaces, including greening of small urban spaces where appropriate. The townscape guidance provided in Appendix B of this document is intended provides further guidance on where trees would be appropriate.

The Metropolitan Views Draft SPD• (October 2007) was produced by the City of Westminster to identify views of metropolitan importance and to explain the council's policies to protect such views. Local views are identified in conservation area audits which the council is producing for each conservation area. As noted in Section 5 of this document, important views need to be considered in the placement of trees into the townscape.

• The Metropolitan Views Draft SPD has been out to consultation but will be reviewed subject to the revised draft London View Management Framework SPG which is out to consultation until September 2009.

APPENDIX F
TREES ON OTHER SITES WHICH AFFECT THE PUBLIC REALM

Planting and landscaping in the public realm is commonly associated only with parks, squares, avenues and other public open spaces. Yet even in the densely developed area of central London, traditional townscape contains also a wealth of other green spaces. These include the grounds of institutions, publicly-assessable areas within major developments, communal gardens and even the cumulative effect of planting in long stretches of residential front and rear gardens. The principles contained in the body of this document also apply to these areas.

This appendix provides brief discussion of some additional issues that should be considered in making planting decisions in these areas, however only insofar as these decisions impact on the public realm. As has been noted in the body of this document, this is not intended to cover the breadth of issues which can arise over privately-owned trees (such as tree subsidence, TPO assessment and the like).

Tree planting on development sites

As noted in Section 3 of this document, trees add value to development. However, the number of trees planted is less relevant than *the quality and scale of the trees planted*. It is the larger landscape species of trees that confer the greatest benefit. These benefits include: attractiveness, stature, creating a sense of place, assisting with way-finding and, crucially, for casting deep shade and cooling our buildings, public squares and meeting places in future.

> The principal aim should be “the right trees in the right places”, with the emphasis not on numbers of trees, but the inclusion of trees that are able to grow into specimens of quality and scale for that site.

The council will, where appropriate, require suitable landscaping of developments that as a minimum maintains existing levels of amenity. This can be secured through the use of planning conditions and Section 106 agreements. The objective will be to enhance the amenity of the development and its environs through tree planting, and also to increase biodiversity.

For the successful implementation of these policies, the council usually encourages designers, landowners and developers to incorporate planting and landscaping in new developments in a way that complements the historic character of Westminster. In certain large scale developments, however, it may be appropriate to incorporate tree planting as part of a contemporary setting.

Street layouts, geometries and networks should aim to make the environment self-explanatory to all users, and features such as trees (in addition to others such as public art, planting, lighting and architectural style – see the Westminster Way for more details) can assist navigation and potentially reducing the need for cluttering signs.

Street lighting should be planned as an integral part of the design of the street layout, and in conjunction with the location and anticipated growth of planting. The potential for planting to obscure lighting through growth should be considered when deciding what and where to plant.

Grosvenor Waterside (left) and Monck Street (right) - Planting integrated into the development

Space for planting should be integrated into layout and building designs, and, wherever possible, located on private land or buildings (generous balconies, roof gardens, walls) or public land intended for adoption, including the highway.

If the council is not to be responsible for tree maintenance in the public realm, alternative innovative arrangements may be required to ensure sustainable management of the landscape. These may include the careful design of ownership boundaries, the use of covenants, and annual service charges on new properties.

Funding for initial set-up costs and an endowment to generate income for maintenance (e.g. executive staff, gardening staff, site offices, equipment, machinery, stores, compost/leaf litter-bins), and community and resident facilities capable of generating regular income, may be sought under a Section 106 agreements. Contributions to cover the cost of tree planting in other locations, should trees be lost due to development, may be required.

Supplementary Planning Guidance “Trees and other planting on Development Sites” (2004) contains detailed advice on planting on sites of new development. It includes important advice on:

- The importance of incorporating planting in the early stages of design
- Opportunities for inclusion of greenery in new development
- The protection of existing trees on development sites
- The effect of new buildings and services on existing trees
- The effect of associated building activities on existing trees
- Planting new trees on new development sites
- Planting in front garden spaces
- Obstruction of daylight and sunlight

Private gardens

Private gardens can potentially contribute significantly to the streetscape and character of an area. For example, the leafy green gardens of St John's' Wood create a characterful environment that enhances the areas streets, provide visual relief in the built environment, and provide habitat for numerous species that would be unlikely to choose to exist in the area without it.

As part of its commitment to preserve the historic character of Westminster, the council is mindful of the need to retain this tradition. At the same time we recognise that some flexibility may be necessary in specific cases, if it is evident that the city's overall historic character and general environment will benefit. For example, the removal of individual trees and their replacement with others in more suitable positions may be appropriate.

Certain species of tree are 'self-seeding', and these trees in particular can be quite invasive. Without careful planning of the trees location, as it matures it can sometimes become clear that management of the tree is no longer alleviating the problems that it is causing, whether that be blocking daylight, views, causing a garden to be dominated by shade etc. Owners of trees, that are causing amenity problems should make the case for removal to our arboroculturalists for the trees' removal. The focus here returns to ***"The right tree in the right place".*** Whilst the council will still consider amenity benefit (which tends to be wider), against amenity detriment (which tends to be more localised), the balance will be more likely to be tipped towards the owners wish to remove the tree, subject to the long term amenity and biodiversity contributions the replacement tree is likely to make.

Where trees are situated within a Conservation Area or subject to a TPO they are afforded statutory protection under the Town and Country Planning Act 1990. This means that if trees are protected either permission is needed, as is the case with TPO protected trees, or a notification of intent in required as is the case with trees situated within Conservation Areas. Almost 80% of the Westminster is now designated as Conservation Area. Therefore the majority of privately owned trees within Westminster are subject to statutory control. Other relevant legislation should also be considered, such as the Planning Act 2008 , Highways Act 1980, Occupiers Liability Act (1957 and 1984) and Local Government Miscellaneous Provisions Act (1976). Council's arboriculturalists will be able to provide more detailed advice in these matters which largely fall outside the scope of this document.

Other Council Owned Trees

In addition to its responsibilities for trees on the public highway and in parks and open spaces the council also has responsibility for trees on its other landholdings. For example trees within school grounds, on social services properties, and most obviously trees on housing land. These trees provide a valuable natural resource on open space that is often visible by the public, if not always accessible, and that is likely to stay in the council's portfolio for the long term.

In managing trees on these sites, the City Council will:

- Identify and evaluate the age and species structure of the tree population with a view to strategic renewal programme over the long-term which aims to maintain, as a minimum, current standards of amenity and biodiversity
- Plant species appropriate to the conditions and character of the site, in accordance with guidance contained within this document, ensuring that new tree planting does not reduce the value of the existing landscape.

- Plant native tree species, that provide habitat for wildlife and enhance biological diversity, where it is appropriate to do so
- Remove specimens which are considered to pose an unacceptable level of risk to persons and property, where removal is justified to implement an agreed landscape plan, or where replacement with a better specimen might be the best way forward.
- Consult with interested parties such as residents associations, prior to carrying out works that will have a significant impact to amenity or the appearance of the area

Schools

Most schools have an element of outdoor space, and trees can add character, shade to playgrounds, and the ability to educate pupils of their proximity to the natural world and the importance of trees. Schools will bear in mind the educational and amenity benefits possibilities in maintaining a diverse, healthy tree stock.

There are opportunities in the current Building Schools for the Future programme to ensure that trees of quality and scale in particular are retained, and numbers increased where practical. The council's Open Space Strategy also notes a priority to identify appropriate opportunities to make spaces, including school playgrounds, 'multifunctional' which may allow greater use by the public.

Council Housing Estates

Whilst there are a number of excellent trees growing in Westminster's housing estates, they also provide good opportunities for Council to increase its tree stock. The Open Space Strategy prioritises the enhancement of open space within housing estates, including maintaining biodiversity and addressing areas of wildlife deficiency, and designating and extending Green Routes. The document also sets out how the council intends to address a number of identified priorities (which could include improvements in the provision of high quality trees) including:

- In partnership with CityWest Homes and other housing providers, carrying out a comprehensive study of open space on Housing Land, including a full audit of space on estates, including its condition and function; and working with residents to explore ways of improving the quality of housing open spaces, and addressing conflicts of interest on the usage and function of housing space.
- Preparing design guidance for new and existing open space on housing land

The urban design principles in Section 4 of this document should be rigorously applied, ensuring a thorough understanding about how the tree will contribute to the amenity offered by the open space. Detailed townscape guidance on various types of housing estates is also provided in Appendix B.

Social Services

There are less opportunities for increased tree planting on Social Services sites, as they tend not to include much open space. Nevertheless, consideration should be given in to the potential for trees to offer amenity, educational and sustainability benefits at each site.

APPENDIX G
REFERENCES AND CONTACTS

General

Department for Communities and Local Government, *Trees in Towns* II (2008)
http://www.communities.gov.uk/publications/planningandbuilding/treesintownsii

Forestry Commission, *Forestry Research*.
http://www.forestresearch.gov.uk/

Lawrence, Henry W., *City Trees – A historical geography from the Renaissance through the Nineteenth Century* (2006). University of Virginia Press.

London Tree Officers Association
http://www.ltoa.org.uk/

Natural England
http://www.naturalengland.org.uk/regions/london/

Plant Publicity Holland, *Trees, relief for the city* (2008). All-Round Communications.

Trees and Design Action Group (2009) *No trees No future: Trees in the Urban Realm*. Draft 2nd Edition, November 2009.

The Tree Council
http://www.treecouncil.org.uk/

Mayor of London, *Tree and Woodland Framework* (2007)
http://www.london.gov.uk/mayor/environment/forest/index.jsp
http://www.london.gov.uk/mayor/environment/forest/latest.jsp

London Parks and Gardens Trust inventory of historic green spaces

Design guidance

Commission for Architecture and the Built Environment (CABE), *Public Space Lessons* (2008)
http://www.cabe.org.uk/publications/adapting-public-space-to-climate-change

English Heritage, *Streets for All* - a guide to the management of London's streets (2000)
http://www.english-heritage.org.uk/server/show/nav.11220

Transport for London (TfL), *Streetscape Guidance 2009: A guide to better London streets* (2009)
http://www.tfl.gov.uk/businessandpartners/publications/4858.aspx

Environmental information

Adaptation Strategies for Climate Change in the Urban Environment (ASCCUE)
http://www.sed.manchester.ac.uk/research/cure/research/asccue/

Gill. S, J. Handley, R Ennos, S. Pauleit, *Adapting cities for climate change: the role of green infrastructure* (2007). *Built Environment*. 30(1), 97-115.

Department for Communities and Local Government (CLG), 2007, *Climate Change and Urban Green Spaces*, Neighbourhoods, Cities and Regions Analysis Division. www.communities.gov.uk

London Climate Change Partnership, *Adapting to climate change; Lessons for London* (2006)
http://www.london.gov.uk/lccp/publications/adapting-jul06.jsp

Mayor of London, *London's Warming (*2002)
http://www.london.gov.uk/gla/publications/environment.jsp

Mayor of London, *Leading to a Greener London: An Environment Programme for the Capital* (2009).
http://www.london.gov.uk/mayor/publications/2009/07/greener-london.jsp

Site considerations

Department for Transport, Manual for Streets (2007).
http://www.dft.gov.uk/pgr/sustainable/manforstreets/

National Joint Utilities Group
http://www.njug.org.uk/

Roberts, J., Jackson, N., Smith, M., Tree Roots in the Built Environment (2006). London, The Stationery Office.

Trowbridge, Peter J., Bassuk, Nina L. *Trees in the Urban Landscape – Site assessment, Design and Installation* (2004). Wiley.

Information on species selection

Department for Communities and Local Government, *Guidance on high hedges*
http://www.communities.gov.uk/planningandbuilding/planning/treeshighhedges/highhedges/

Greater London Authority, *Right Trees for a Changing Climate*.
http://www.right-trees.org.uk

The Offwell Woodland & Wildlife Trust
http://www.countrysideinfo.co.uk/woodland_manage/tree_value.htm

Patterson, A (2003) *Best Trees for your Garden*. Firefly Books.

Royal Horticultural Society
http://www.rhs.org.uk/databases/summary.asp

Policy

Department for Communities and Local Government, *National Planning Policy Statements* (various dates)
http://www.communities.gov.uk/index.asp?id=1143803

Mayor of London, *London Tree & Woodland Framework*
http://www.london.gov.uk/mayor/environment/forest/index.jsp

Westminster City Council, *Core Strategy*
http://www.westminster.gov.uk/services/environment/planning/ldf/corestrategy/

Westminster City Council, *Open Space Strategy* (2008)
http://www.westminster.gov.uk/environment/planning/ldf/documents/oss.cfm

Westminster City Council, *Draft Section 106 SPG* (2008)
http://www.westminster.gov.uk/environment/planning/sitesandprojectspolicies/planning-obligations-spg.cfm

Westminster City Council, *Unitary Development Plan* (2007)
http://www.westminster.gov.uk/environment/planning/unitarydevelopmentplan/index.cfm

Westminster City Council, *Westminster Way* (2004)
http://www.westminster.gov.uk/environment/planning/publicrealm/city_wide_guidance.cfm

Westminster City Council, *Conservation Area Audits* (various dates)
http://www.westminster.gov.uk/environment/planning/conservation/audits.cfm

Further contacts at Westminster City Council

Rebecca Cloke
Parks Project Manager
City Planning Group
Tel: 020 7461 3433
Email: rcloke@westminster.gov.uk

Chris Colwell
Senior Arboricultural Officer
Street Management
Tel: 020 7641 2619
Email: ccolwel@westminster.gov.uk

Chris Mason
Policy Manager (City Schemes)
City Planning Group
Tel: 020 7461 2286
Email. cmason@westminster.gov.uk