Leinster's committee if they could join together to employ a constable to keep order in their two squares. At both Montagu Square and Queen's Gardens a beadle was appointed[29] who, among other chores, apprehended people in the square for begging.[30] However, the appointment of an official custodian did not always solve the matter of law and order: a letter of 1890 to the committee by a resident of Queen's Gardens claimed that the square's constable had 'entered and drank my spirits with my servants' and he returned home to find his female servants drunk.[31] A resolution to lose the post of constable as 'found to be unnecessary' quickly followed.

Activities were also restricted in the nineteenth-century square gardens: rules for Prince's Square garden disallowed noisy or disorderly conduct and the letting off of fireworks and 'cycles of all kinds and perambulators' were prohibited as were 'bats, balls, kites, hoops and bows and arrows'; also 'no carpets, rugs, doormats or articles of furniture shall be beaten, cleaned or dusted in any part of the garden'.[32] Tennis was allowed at Montagu Square garden in the 1880s but then banned by 1884 because of damage to the lawns and flower beds. The garden rules are still placed in prominent positions in the squares today *(fig. 78)*.

All was to change with the outbreak of the First World War, which would bring about changes in garden use, policing, gardening and in the committees themselves. The garden committees had consisted of four to six male residents throughout the nineteenth century: a female committee member is not recorded until as late as 1919, reflecting the changes in society after the war.[33] The wartime material would fill a further article.

My research so far has demonstrated how valuable the archives of these early garden committees can be to understanding the history of the garden squares and their development. All the archives consulted have demonstrated in their varying ways the respect accorded to the garden, the importance of maintaining its appearance and of promoting proper behaviour therein. In many ways, the running of the early committees has much in common with that of the various Garden Square committees, Friends', residents' and other groups found in place today, who evince the same desire to exercise control over their shared amenity, the collective aims of residents developed in order to uphold their shared values.

29. Queen's Gardens archive, minutes: the beadle was a retired man who had worked for the Metropolitan Police and was paid 16 shillings a week and given £7 a year for a suit of livery.
30. Queen's Gardens archive, minutes: the beadle apprehended Thomas More for begging and assaulting the constable and there is a list in the minutes for 1860-1 containing the names and punishments that these people received - for More, one month in the 'House of Correction'.
31. Queen's Gardens archive, letter in the minute book 1890.
32. Prince's Square archive, printed rules of 1882.
33. Prince's Square archive, minutes 1919.

Greening the City: The Development of Tree-lined Streets and Avenues 1860 – 1930

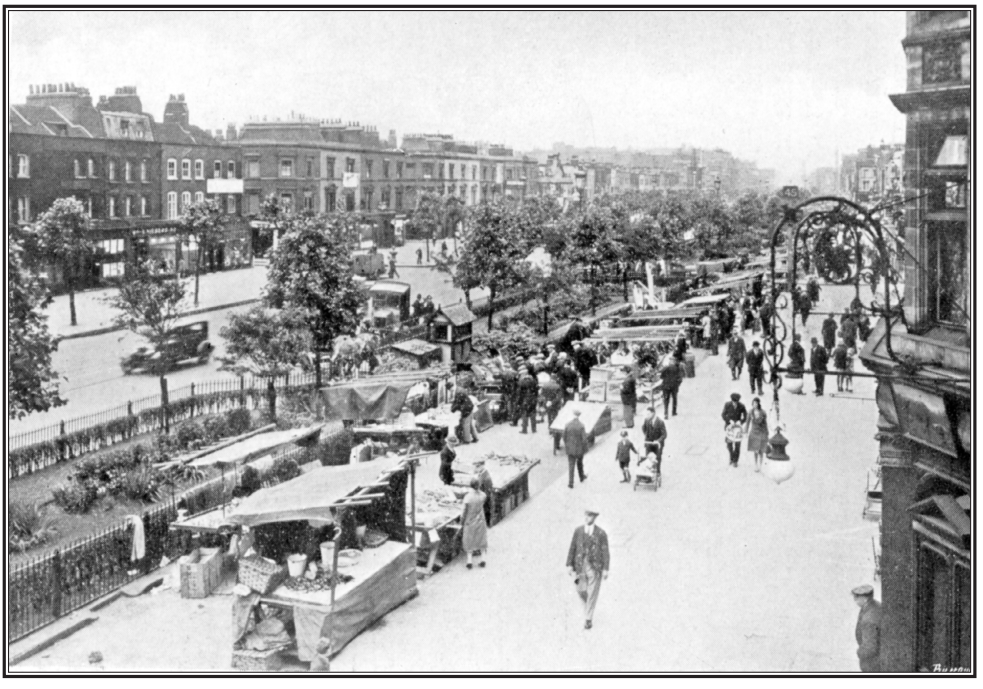
By Hazel Conway

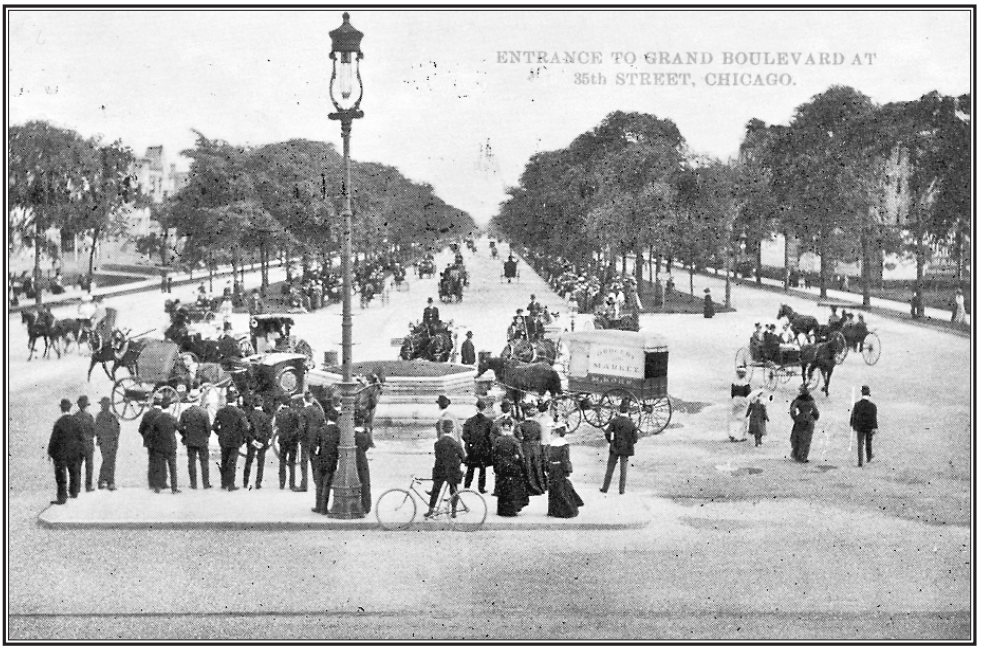
Child's Song in Spring
The chestnut's proud and the lilac's pretty,
The poplar's gentle and tall,
But the plane tree's kind to the poor dull city,
I love him best of all!

E. Nesbit (1858-1924)
from *A Pomander of Verse*, 1895

The pressure for street tree planting developed within the context of nineteenth-century population expansion and the growth of cities. Drinking water was polluted, as was the air. Town planning did not exist, there were overcrowded and insanitary dwellings, no sewers and severe traffic congestion. It was only gradually as the century progressed that local government acquired the necessary powers, summarised in the Public Health Act 1875, to confront these major urban problems. In London, metropolitan-wide local government came more than a decade later with the formation of the London County Council in 1889. New urban parks, created from c.1840 on, were seen as the lungs of the city, where the air was fresh and people's spirits lifted by contact with nature. At the end of the nineteenth century a similar point was made regarding road-widening: 'New streets provide arteries for traffic and breathing spaces for neighbourhoods'.[1] Tree-lined streets were

1. P. J. Edwards, Clerk of Improvement Committee, *History of London Street Improvements 1855-97* (LCC, 1898), p.163.





79. Mile End Waste Gardens, Saturday Market, c.1930
(Courtesy Tower Hamlets Local History Library and Archives)

80. Entrance to Grand Boulevard at 35th Street, Chicago
(Courtesy ChicagoPostcardMuseum.org)





81. Postcard of Victoria Embankment, c.1900. Note the tree guards
(Private Collection)

82. Great Western Road, Looking West, Glasgow
(Courtesy of Glasgow City Archives and Special Collections)

attractive, the air was fresher and they spread an awareness of the seasons across the fabric of the city.

The influences on the development of tree-lined streets came from a number of sources. Open spaces societies and Sanitary Associations were set up in major cities. These included the Manchester and Salford Sanitary Association set up in 1852; the Kyrle Society, 1875, which aimed to bring beauty to working people by many means including tree planting; and the Metropolitan Public Garden, Boulevard and Playground Association in 1882. The following year the latter changed its name to the Metropolitan Public Gardens Association (MPGA).

Other influences came from travellers in Europe and the USA who commented on, and compared what they had seen, to the state of British cities. J. C. Loudon travelled widely in Europe and published his ideas for greening the city: these ranged from the design of streets and selection of street trees, to town planning and green belts. He noted Bavarian streets lined with fruit trees, ornamental and forest trees, the choice depending on the locality. In Brussels, lines of elm and lime enclosed separate roads for pedestrians and carriages, which had been formed on the levelled ramparts. By comparison, in England in the 1830s there were a few shady avenues in Oxford and Cambridge, while Chester and Chichester featured walks on the ramparts around the town.[2] No mention is made of London and as a resident Loudon would surely have been aware if street tree planting was planned, or had taken place. Indeed he planted a Sumach by the path of his new house in Porchester Terrace. This 'met with stern opposition …from the District Surveyor' and neighbours complained it would drip in wet weather, so he had to remove it.[3]

From the mid-nineteenth century the influence of one particular city, Paris, became increasingly apparent. Between 1852 and 1870 Baron Haussmann created 71 miles of new roads, 400 miles of new pavements, 320 miles of sewers and 100,000 street trees were planted. In this he was assisted by the engineer and landscape architect Jean-Charles-Adolphe Alphand, chief of the Paris City Parks.[4] In Alphand's book *Les Promenades de Paris*, he gives details of the planting and the recommended spacing for street trees for different widths of boulevard.

William Robinson, gardener, spent most of 1867 in France and praised the improvements and tree-lined streets of Paris, Rouen and Lyon. By comparison he thought that Britain lagged behind, with our 'great sooty, packed and cheerless cities'. He did not, however, draw attention to any differences in the scale of these cities, nor to the differing levels of industrialisation in the two countries.[5] By the late 1860s Alexander McKenzie, designer of Alexandra Palace, Finsbury and Southwark Parks, noted a 'growing taste for tree-planting in the new streets' in London. He had for some years been considering ways to improve the health of London's population and make the city more worthy of comparison with France. But, he noted, the English and French differ and there was no question of converting London into another Paris. In London there are no 'lounging thousands' on shady seats, because people are far too busy to 'sit and sip their coffee in the streets'. Moreover its size made stopping on the way to work 'totally incompatible with our bustling life'.[6] McKenzie recognised the importance of major roads as the main arteries of large cities and considered 'One of the finest roads ... leading from the City of London into Essex' to be the Mile End Road, which if suitable trees were planted could become the 'great eastern entrance to the Metropolis'.[7] In 1883 Mile End Road was planted with plane trees by the MPGA, which had direct links with the sanitary reform movement and targeted the poorest areas of London, where street trees would do the most good ***(fig. 79)***.

In the USA travellers in the 1870s reported 'street widening is the order of the day'. In New York the approaches to the new parks had been planted as tree-lined avenues and in Philadelphia, Baltimore and Richmond

2. *Encyclopedia of Gardening* (1834), p.336; M. L. Simo, *Loudon and the Landscape: from County Seat to Metropolis, 1783–1843* (Yale University Press, New Haven and London, 1988).
3. A.D. Webster, *London Trees* (Swarthmore Press, London, 1920), p.3.
4. Jean-Charles-Adolphe Alphand, *Les Promenades de Paris* (J. Rothschild, Paris, 1867–73).
5. W. Robinson, *The Parks, Promenades and Boulevards of Paris* (John Murray, London, 1869), p.114.
6. Alexander McKenzie, *The Parks, Open Spaces and Thoroughfares of London* (Waterlow and Sons, London, 1869), pp.3-4.
7. McKenzie, *op. cit.*, p.20.

silver maple (*Acer Wagnerium*) had been planted.[8] In Washington 200 miles of shady avenues and streets had been planted with 40,000 trees.[9] Chicago's boulevard system with parks and parkways was put forward by J. S. Wright in 1849 and implemented from the 1870s ***(fig. 80)***.[10]

One of the most significant and widely publicised improvements in London in the 1860s was the creation of the Victoria Embankment by Joseph Bazalgette, engineer, and the Metropolitan Board of Works, as the location for the Northern Outfall Sewer for the city. The road on top of the sewer would relieve traffic in the Strand, while below there was a subway and the Metropolitan District Railway. On the reclaimed land between the buildings and the new road, Embankment Gardens were laid out largely to McKenzie's design. The new road was the perfect location for an avenue of trees and on the last day of 1868, 250 plane trees were planted along the southern footpath ***(fig. 81)***.[11]

Until the formation of the LCC in 1889 metropolitan improvement involved a variety of official and private bodies. In the City, the Corporation was responsible for the square mile and improvements in the City of London were financed by tax on the coal coming into the Port of London. Elsewhere, private individuals such as the Dukes of Bedford and Westminster, boards, parish vestries, builders, private companies such as those that built the docks, Government funded projects and the Metropolitan Improvement Society, which was formed in 1842, all played a role.[12]

Outside London, local authorities were gradually acquiring the powers to confront some of the major urban problems, build new roads and plant street trees. While identification of the first town in the country to plant tree-lined streets is problematic, it would certainly appear that Glasgow must lay claim to being the first city to build and plant a boulevard. Great Western Road, Glasgow was completed in the 1840s, with major building development of either side taking place from c.1870. It has been described as one of the grandest suburban boulevards in Britain, notable for its length, width and straight alignment ***(fig 82)***. The distinction between a boulevard and a road lies in the separation of the central carriageway from the parallel narrower side roads, which serve the residences or commercial premises. The pavements bounding either side of the Great Western Road carriageway are flanked by grass strips planted with trees and shrubs in a continuous belt of greenery on both sides. These in effect form linear parkways, which were planted with limes and underplanted with holly, rhododendron, laurel and other shrubs. The central carriageway and pavements are some 20m wide.[13] Other systems feature a central reservation planted with trees and shrubs separating the two fast lanes. In parkways such as those in Chicago, the central reservation was wide enough to form a promenade planted with grass, trees and shrubs.[14]

With the growing confidence of local government came an increased sense of civic consciousness. Among the first large towns to plant street trees was Birmingham, whose mayor 1873–5 was Joseph Chamberlain. By 1876 Broad Street in the centre of town had been planted with trees on both sides at 20 yard intervals, rising out of the pavements ***(fig. 83)***. The trees were supplied and planted by R. H. Vertegans of Chad Valley Nurseries. Clean, young, well rooted specimens 14–15 feet tall were selected and of the 99 planes planted, only two died. In each case the paving stones were lifted, and large holes 6-7 feet across and 3 feet deep dug and filled with new soil. Circular tree guards were fitted with iron gratings 3 ft.sq. to fit into the pavements and to secure the trees to their guards. Along the main roads to New Street Station, which opened in 1854, two dozen Canadian or Western plane trees were planted, 'the very best for planting in large towns especially in

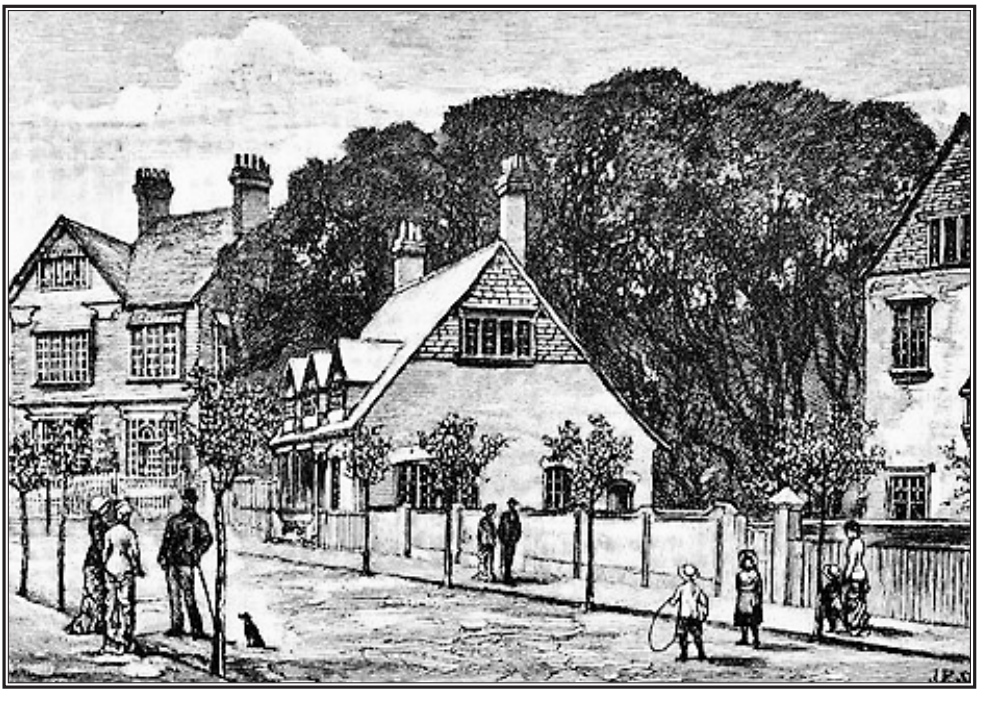
8. *Gardeners' Chronicle (GC),* 13 August 1870, pp.1087-8.
9. *GC*, 20 April 1878, p.501.
10. South Park District, designed by Olmsted and Vaux; West Park District, W. le Baron Jenney and O. F. Dubois; North Park District, 1875. See A. B. Jacobs, E. Macdonald and Y. Rofé, *The Boulevard Book: History, Evolution, Design of Multiway Boulevards* (MIT Press, 2003).
11. McKenzie, *op. cit.*, p.17.
12. G. Tyack, *Sir James Pennethorne and the Making of Victorian London* (Cambridge University Press, 1992).
13. F. Jamieson, *Draft Conservation Area Appraisal* (2009); G. R. Urquhart, *Along Great Western Road: an Illustrated History of Glasgow's West End* (Stenlake Publishing, Ochiltree, Ayrshire, 2000).
14. H. W. Lawrence, *City Trees: a Historical Geography from the Renaissance through the Nineteenth Century* (University of Virginia Press, Charlottesville and London, 2006). This examines the planting of trees in the public realm, i.e. parks, squares, cemeteries, churchyards and street trees.

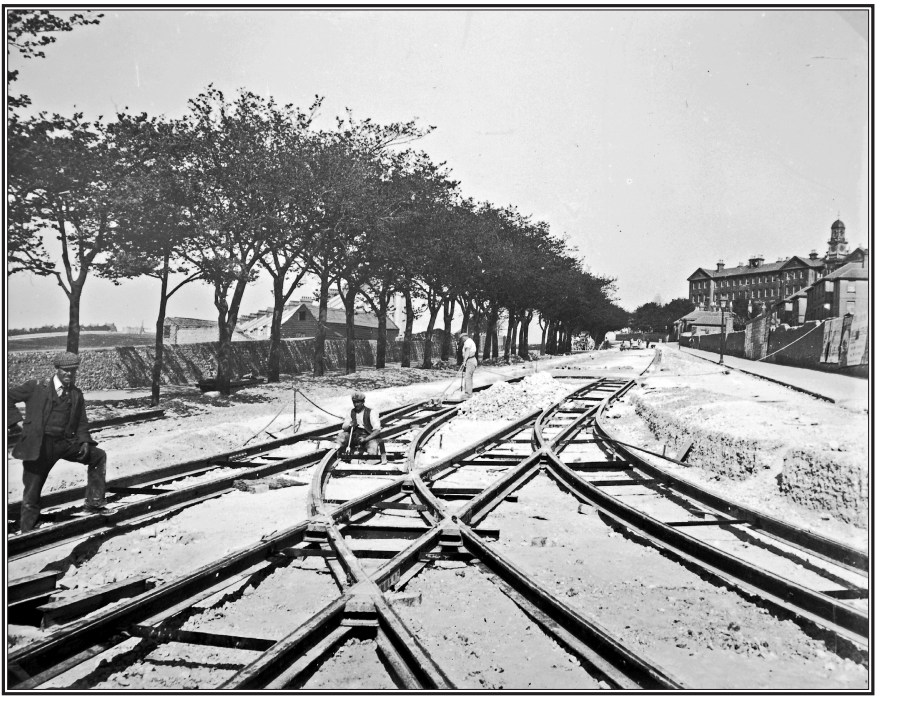




83. Broad Street, Birmingham, c.1900
(Courtesy www.oldukphotos.com)

84. Cromwell Road, Natural History Museum, South Kensington, c.1900.
The young trees can be seen planted at the edge of the pavement
(Copyright English Heritage.NMR. Source: English Heritage Images)





85. Queen Anne's Gardens, Bedford Park, 1882
(Reproduced from Moncure Conway, 'Travels in South Kensington', 1882)

86. Elm Grove, Brighton c.1900
(Courtesy James Gray Collection / The Regency Society)

the manufacturing districts'. The Borough Surveyor, Mr Till, ensured that the trees were well-watered during the hot weather. Other streets such as Bristol Street and the town end of Bristol Road were planted by Vertegans with 100 limes, but the comment was that these were not so suitable as they lost their leaves early in the season.[15]

The question of which variety of tree was the best to plant was the subject of much debate. William Robinson advocated the Western plane (*Platanus occidentalis*) as first choice, followed by the horse chestnut, despite its early loss of rusty leaves, which he had seen for himself in Paris. Robinson also recommended the Locust tree (*Robinia pseudoacacia*), which compared to the lime 'is as gold is to pewter'. Copper beeches were fine for parks, but on no account should be used in streets, until there is too much green in our cities! He was vehement in his opinion of the planting of elms in the Mall in St James's Park, 'nothing is more calculated to bring town gardening into disrepute'. If planes had been planted they would have made a noble sight but the elms 'now form a miserable one'.[16]

In the 1860s there were very few trees planted in the eastern part of London and isolated examples in the western part.[17] By 1870 a more optimistic note appears: there were a few yards of plane in Piccadilly and elms in Brompton Road.[18] Since the latter had only 15 inches of soil around the trunks, they became stressed and were replaced by planes in 1887.[19] Poplars were planted along Cromwell Road and Exhibition Road but these, it was noted, did not have the grace of the silver maple or the Western plane *(fig. 84)*.[20]

By the late 1880s a marked change in tree planting in London's busy roads becomes evident: Northumberland and Shaftesbury Avenues were planted as soon as they were completed and in the spring of 1887 the new Charing Cross Road was planted.[21] Trees were also being planted along the main roads to the suburbs. Among the individuals and organisations involved at that time in the planting of street trees were benefactors, Boards of Health and developers. A 'gentleman' offered £1,000 towards the planting of plane trees in ten parishes, 'where the need for shade is greatest'. The first offer was to the neighbouring parishes of Paddington and Marylebone and then others on a first come, first served basis.[22] A motion was placed before the Hackney Board of Health that roads in the vicinity of Highgate should be planted with trees. This was carried with one dissention and referred to the General Purposes Committee to implement.[23] The new road Fitzjohn's Avenue was planted in 1879 with alternate pink and white horse chestnuts. These were paid for by subscription from the residents. Nearby roads were planted with plane and lime.[24]

It was quickly recognised that trees made new housing developments more marketable and in the well-publicised 'aesthetic' suburb of Bedford Park (1875) street trees were planted from the beginning *(fig. 85)*.

The formation of the LCC in 1889 meant that for the first time London had its own local government. An enquiry in the 1890s into the state of street tree planting in seventeen districts showed that by that time only three were absolutely treeless. The total across fourteen districts was 14,700 trees, 5,158 of them planted by boards and vestries, and 5,323 by builders and others; in eight districts wooden tree guards were used and in one metal guards. In Hammersmith the minimum street width for tree planting was 45 feet; in Streatham, 40 feet.[25] The LCC quickly proved it could raise money for improvements, with streets near the City being widened sufficiently to plant trees.[26] Questions were raised about tree planting in other large urban centres and whether ratepayers should bear the costs.[27]

By this time the London plane (*Platanus x hispanica*) had been adopted almost everywhere, because of its resistance to 'drought, smoke and unfavourable conditions of soil and atmosphere'.[28] In Southwark Mr

15. *GC*, 16 September 1876, pp.354-5.
16. Robinson, *op. cit.*, pp.166-7.
17. *GC*, 7 March 1863, p.219.
18. *GC*, 13 August 1870, pp.1087-8.
19. *GC*, 15 October 1887, p.462.
20. *GC*, 13 August 1870, pp.1087-80.
21. *GC*, 15 October 1887, p.462.
22. *GC*, 13 July 1878, p.50.
23. *GC*, 26 October 1878, p.534.
24. *GC*, 22 November 1879, p.656.
25. *GC*, 29 October 1892, p.700.
26. *GC*, 10 August 1895, pp.149-50.
27. *GC*, 26 December 1896, p.400.
28. H. Augustine and M. H. Ford, 'History of the London Plane', *Proc. Roy. Irish Academy,* Vol. 35, Sect B, No. 2, 1919.

Maller's efforts to plant trees in Tooley Street, Bermondsey in 1882, were successful. Of the 84 planes planted only twelve failed to survive, the rest were healthy despite 'the atmosphere of the place', which didn't need to be described.[29]

There is still some debate about the origin of the London plane. Some thought it was a hybrid between the eastern plane (*P. orientalis*) and the western plane (*P. occidentalis*). However whether this hybrid occurred naturally in the UK, or whether it was introduced from Spain in the seventeenth century, is still unclear. There is also disagreement about the correct botanic name. Many standard published sources and many institutions use either *P. x acerifolia,* or *P. acerifolia,* or *P. x hispanica.*

The LCC (Improvements) Act 1900 gave the LCC powers to make street improvements in various areas of London including High Street Kensington (£308,500), widening Southampton Row and creating a new street from Holborn to the Strand (Kingsway). The LCC was responsible for maintaining both Embankments and certain main roads, but general street maintenance remained the responsibility of local authorities, boroughs and vestries.[30] The LCC (General Powers) Act 1914 empowered local authorities to plant street trees provided that no more that two-thirds of the residents objected to the scheme.

While plane trees were the preferred choice for the large, polluted industrial and commercial cities, the prevailing conditions in seaside towns and smaller country towns were very different. Brighton today has the largest collection of elm trees in the UK (some 25,000), some of them more than 300 years old. Road-widening and the introduction of tramways in Brighton, as in London, gave the opportunity for tree planting and the choice was elm. This image of Elm Grove c.1900 shows the laying of the tramway and the trees, which from their size predate this event by some years ***(fig. 86)***. Faced with Dutch elm disease from 1971 onwards, Brighton and Hove City Council decided to manage the disease on a tree by tree basis, rather than cutting down the whole stock. This policy continues to this day.

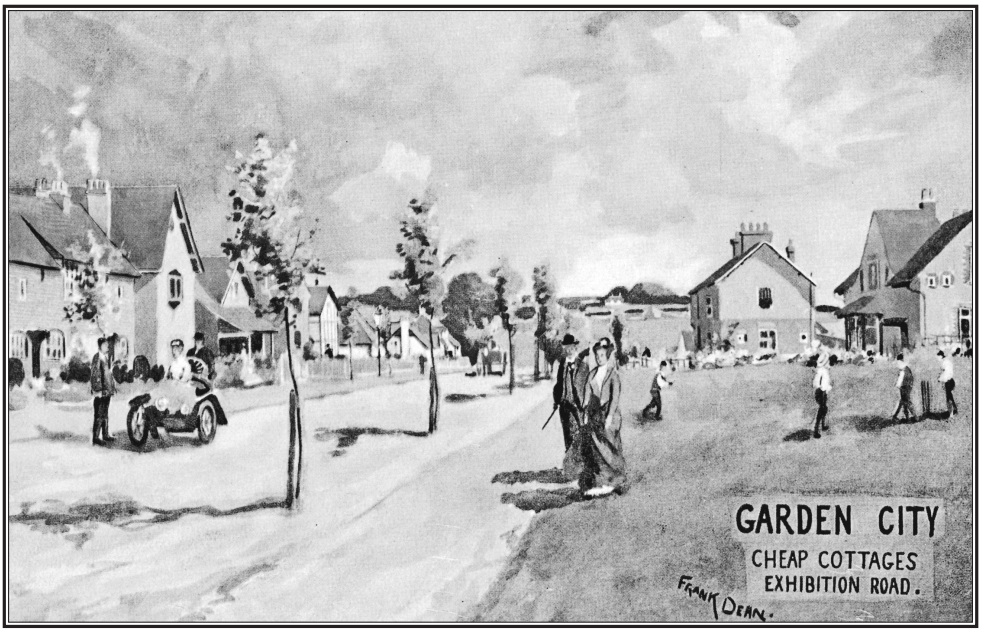
Clacton-on-Sea had 'miles of streets with beautiful young trees' and several towns like Shrewsbury and Grantham were also remarkable for their tree-lined streets. Grantham's streets had been planted by public subscription c.1865, while in Romford the newer streets had been planted by public subscription, plus a local authority grant.[31]

The continued calls for more street trees through the late nineteenth century were challenged by those who argued that: they obstructed sunlight, which children needed; shade was unnecessary in this cloudy climate; and the humidity meant trees kept their leaves longer, making the roads and houses damp and dark.[32] When the MPGA offered £100 to the vestry of St Marylebone for planting street trees, the Chairman of the Works Committee recommended declining, because they would shut out air, light and sunshine.[33]

None of this was true, came the riposte; no one would suggest planting so closely as to shut out the light, or block air circulation. The one great fact of tree planting is 'The influence of active tree life in purifying the air and rendering it healthier and more suitable for human consumption'. Moreover the planting of street trees '[indicates] work in the interests of health and enjoyment…' and was another aspect of improvement.[34] Medical opinions were mixed. According to a 'leading medical man' dense-leaved trees were unhealthy because 'they become strongly impregnated with sewer gas and other noxious elements'.[35] Others argued that for each noble tree-lined thoroughfare there was a decrease in doctors' bills and the benefits to residents and workers were immense.[36] These utilitarian justifications were all very well, but the significance of tree planting was much wider: 'trees give shade and shelter to enjoy, the eye to please, the mind to exercise and soothe, with their varied leaves and flowers, amid the dingy and monotonous mass of town buildings'.[37]

Trees could also play an aesthetic role in

29. *GC*, 2 September 1882, p.306.
30. *Municipal Year Book* 1900, p.7.
31. *GC*, 17 September 1881, p.374.
32. *GC*, 3 July 1880, p.18.
33. *GC*, 22 November 1890, p.597.
34. *GC*, 31 October 1891, p.513.
35. GC, 15 April 1893, p.453.
36. *GC*, 10 August 1895, pp.149-50.
37. *GC,* 31 October 1891, p.513.



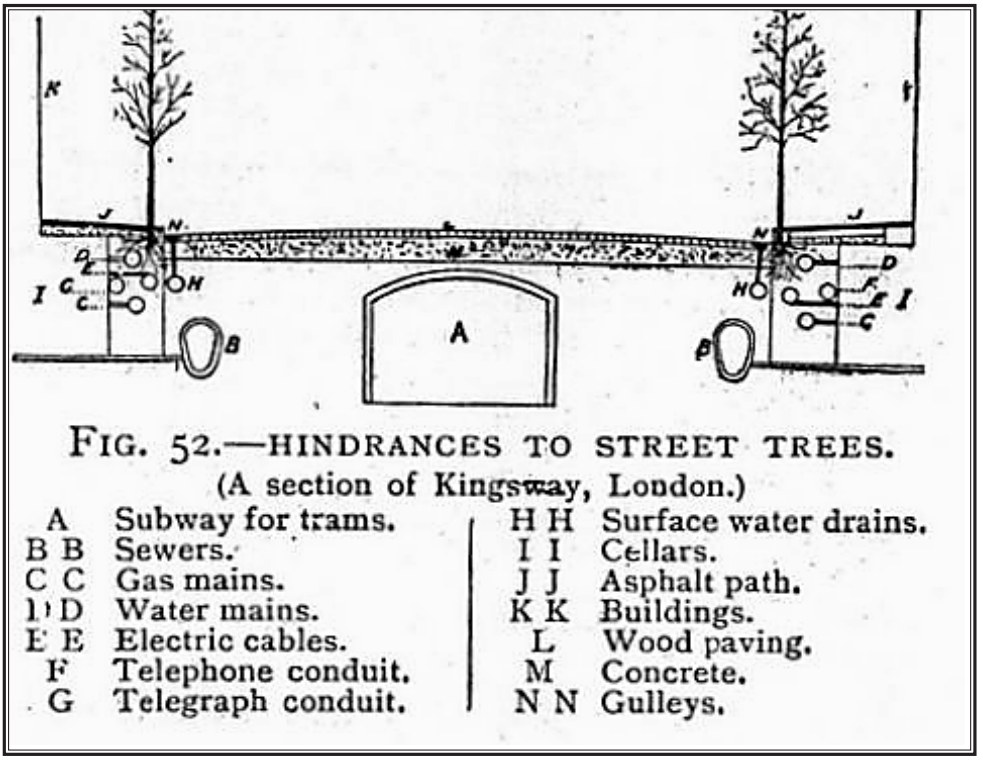


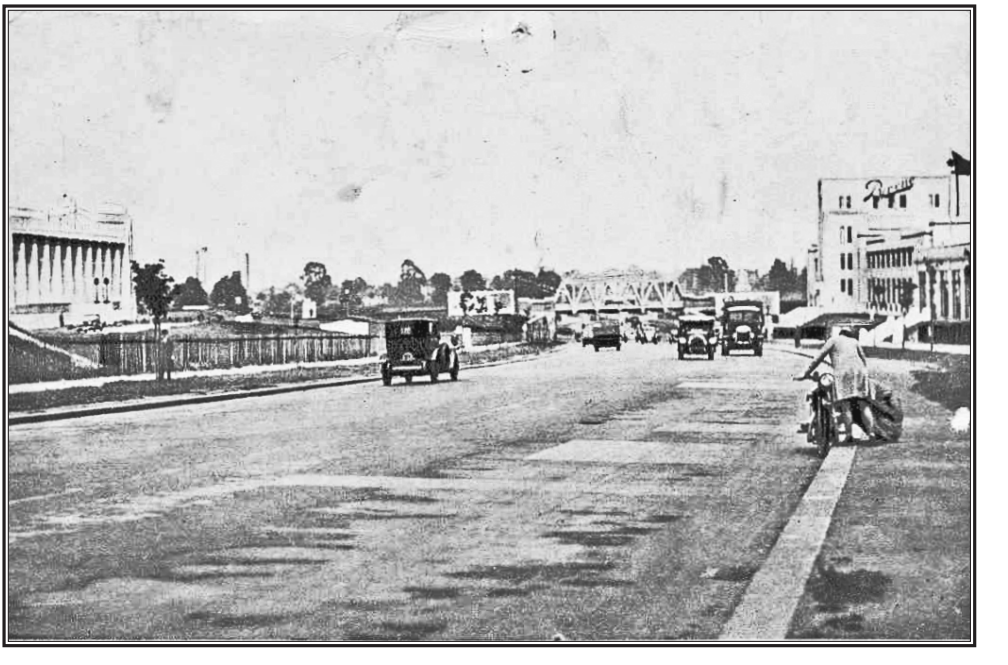
FIG. 52.—HINDRANCES TO STREET TREES.
(A section of Kingsway, London.)

A	Subway for trams.	H H	Surface water drains.
B B	Sewers.	I I	Cellars.
C C	Gas mains.	J J	Asphalt path.
D D	Water mains.	K K	Buildings.
E E	Electric cables.	L	Wood paving.
F	Telephone conduit.	M	Concrete.
G	Telegraph conduit.	N N	Gulleys.

87. Letchworth Garden City, 'Cheap Cottages Exhibition Road', postcard by Frank Dean, 1905
(Copyright First Garden City Heritage Museum www.gardencitymuseum.org)

88. Kingsway, showing tree roots and underground services, 1910
(Repeoduced from *Gardeners' Chronicle*, 12 February 1910, p.101)





89. Storks Road, Bermondsey 1935. Poplars were planted in the 1920s and 1930s
(Photograph taken by Bermondsey Borough Council's Gardens Department;
image pb2389 from the collections of the Southwark Local History Library)

90. Great West Road, Brentford. The road opened in 1925 and the photograph may be dated early 1930s,
since the Pyrene factory shown on the right was built in 1929/30
(From the collection of Roger Williams)

masking styles of architecture that were not to the taste of the period! The Georgian houses of Pulteney Street, Bath, built 100 years ago (i.e. *circa* the mid-eighteenth century) were 'severely formal in their primness … [and] needed such relief as trees afford'. If the street was replanted with planes or locust trees it would set the standard for the rest of the city, which had been 'perfunctorily and injudiciously' planted.[38]

Street trees grow in an unnatural environment and unless well managed become stressed. To survive they need access to light, air and water and be planted so that potential injury to the tree and to the root plate is minimised. The new technology for the surfacing of roads and pavements, which developed during the last quarter of the nineteenth century, could prove detrimental to street trees and it took some time before this was fully understood. Sutton Court Road next to the Royal Horticultural Society Gardens in Chiswick was lined with acacias, which had been planted near the edge of the footpaths on either side. The road was private and the paths were of gravel. When the road became the property of the Local Board c.1883, the paths were asphalted and the road Tarmacadamed. Only one square foot of open soil was left around each stem and, as the rain was channeled to drains, the roots were deprived of both air and water.[39] A few years later the trees were suffering from dry rot and evidently under stress. In Berlin the municipal authorities banned the use of asphalt on footpaths because of injury to the tree roots, and lack of air and water.[40]

Light was vital and trees would not grow well in the shade of high buildings. A minimum distance of 6 yards between the line of buildings and that of trees was proposed, but this was not always put into practice, or indeed possible. In Gray's Inn Road the planes were planted 9-10 feet from the buildings and critics thought moderate-sized trees would have been preferable.[41]

Increasing traffic hazards were also recognised: trees should be set back from the edge of the pavement by 24 inches, to minimise the risk of damage by overladen and swaying wagons. There should be at least 12 yards between the rows of trees on either side of a street.[42] Paris had more experience of tree planting than London and this experience was set out in C. Charguerauds's *Traité des Plantations d'Alignement*.[43] Indeed it was recommended that this book be translated and so become more accessible.[44]

An often voiced bone of contention was that of tree-lopping. 'It will soon be time for the barbarous appointment by the local authorities to top, lop and mutilate trees in London streets and open spaces'. An article in the *Gardeners' Chronicle* called for the 'new men' responsible for open spaces in London, i.e. the LCC, to halt this barbarity.[45] The quality of labour used for pruning was also criticised. Camberwell Council's trees in Camberwell Grove and Grove Park had grown too large, so unemployed labour was used to prune, lop and cut them down. Pruning undertaken by unskilled labourers with a saw, under the direction of an engineer, resulted in 'horribly mutilated trees with hundreds of saw wounds, which give disease-producing parasites ready access to living tissue'.[46] Many adverse comments on this subject appeared in *The Times*, but it was well-recognised that tree management was always liable to upset someone. One suggestion was to cut a few trees in each street each season, rather than lopping a complete avenue at a time.[47] The Keeper of the Royal Botanic Gardens, Edinburgh considered the tree pruning in the Mall 'excellent, as is that used in the royal parks'. By contrast the young plane trees in Piccadilly opposite Hamilton Place 'show mutilation by unscientific pruning'.[48]

A new and important influence on street tree planting in the early twentieth century came from the Garden City Movement and the building of the first Garden City at Letchworth from 1904. This involved planting some 60 miles of new roads *(fig. 87)*. More than 45 different varieties of tree were used, with different species planted on different

38. *GC*, 24 September 1898, p.238.
39. *GC*, 14 July 1883, p.51.
40. *GC*, 17 March 1883, p.346.
41. *GC*, 19 June 1909, p.400.
42. *GC*, 10 August 1895, pp.149-50.
43. C. Chargueraud, *Traité des Plantations d'Alignement* (Rothschild, Paris, 1896).
44. *GC*, 26 December 1896, pp.400-1.
45. *GC*, 2 February 1889, p.158.
46. *GC*, 12 February 1910, p.101.
47. *GC*, 19 April 1910, p.232.
48. *GC*, 26 August 1911, pp.144-6.

routes. People could then choose between routes to and from work, according to whether the trees were early flowering, the first to get their leaves in spring, or the last to feature autumn colours. These were sourced outside England, because although there were hundreds of acres of standard trees available, none of them were properly prepared for street planting. Paris had a number of dedicated municipal nurseries and in Germany hundreds of acres were set aside for street tree nurseries.[49] Street trees must be specially prepared, which German nurseries understood but English ones did not. They must feature a single lead of 6 feet, which is then cut back in winter to 5 feet. Next year the new lead is headed back to 6 feet and so on foot by foot to 12 or 14 feet. The tree is then ready for market – a clean stem of 8 feet topped by a symmetrical head. In England lead back cutting was made immediately above the bud selected for the new lead. In Germany cuts were made as far above this bud as possible and with winter die-back this left about 2 inches of dead wood. The new lead is carefully tied to this when it is about 6 inches long.[50]

In Letchworth, ash (*Fraxinus monophylla*), pear (*Pyrus aria*) and many forms of maple (*Acer spp.*) were planted, but plane, horse chestnut and sycamore were generally not.[51] Town authorities were recommended to grow their own trees not only for convenience and to improve standards, but also because local trees thrived in local soil and in the local environment.

The lack of trees specifically prepared for street planting was clearly evident. When the new street of Kingsway in Holborn was planted in 1910, the heights of trees differed by some 10 feet: 9 foot trees were planted next to 20 foot ones and to 15 foot ones and almost all were lacking a leading shoot.[52] This cross-section of Kingsway, 1910 shows the underground services and the tree roots ***(fig. 88)***. One of the most severe hazards to the trees was gas poisoning by coal gas leaking from the mains, which was often fatal. With gas poisoning the leaves went yellow and fell early, the bark loosened and the wood developed a blueish/red colour. One London borough protected its trees by digging a deep trench around the root and coating the sides with a thin layer of wet clay. This prevented the gas from leaking in.

Because of the adverse growing conditions, skilled management was vital. Trained arboriculturalists were employed in Birmingham and Liverpool, as they were in Europe and the USA, where the City Forester was accepted. But in Britain, generally, they were a rarity and tree management was usually the job of municipal engineers and surveyors 'who cannot be expected to possess a considerable knowledge of planting… upkeep, or tree growth in general'.[53]

By the first decade of the twentieth century there was an increasing demand for trees 'in every little town' but the questions remained: what to choose and how to source them.[54] In London it was thought that the slow progress in 'beautifying' was because of the narrow streets, and a visit to Kew was recommended. There, thirty-four varieties of locust tree (*Robinia pseudoacacia*) could be seen, a dozen of which were suitable to use as street trees.[55] Four years later locust trees could be seen 'almost by the hundreds' in London and in many other towns. It was recommended because it withstood prolonged heat and drought and kept its leaves well into autumn.[56]

Webster wrote in 1920 that plane trees formed 60% of London's street trees, 'indeed during the past five and twenty years it has been planted to the exclusion of almost every other species'.[57] But a look in more detail at one borough gives some indication of the range of trees being planted at this time and the reasons for their choice.

In 1919 Ada Salter became Bermondsey's – and Britain's – first woman mayor; she was chair of the Bermondsey Beautification Committee (1923-1934) and later became chair of the LCC Parks Department. The Beautification Committee launched a successful tree planting campaign. In 1919 there were 376 trees in the borough, and by 1927 the figure stood at 6,101 trees despite the shortage of supplies of saplings post World

49. *GC*, 20 September 1909, p.400.
50. *GC*, 21 December 1907, pp.430-1.
51. *GC*, 13 June 1908, p.386.
52. *GC*, 12 February 1910, p.101.
53. A. D. C. le Sueur, *The Care and Repair of Ornamental Trees in Garden, Park and Street* (Country Life, London, 1934), pp.13, 213.
54. *GC*, 21 December 1907, pp.430-1.
55. *GC*, 2 September 1905, p.190.
56. *GC*, 11 September 1909, p.187.
57. Webster, A.D., *op.cit.,* p.1.

War 1. The trees selected were predominantly London plane and black poplar. The Unemployment Grants Committee provided a 60% subsidy for tree planting and this provided an alternative to the dole. As planting progressed from the larger streets to the smaller ones at the centre of the borough, smaller species such as larch and cherry were introduced. In 1926 the Borough established its own nursery at Fairby Grange near Hartley Wood, Kent and became self-sufficient thereafter.[58] Trees marked the boundaries of the borough, reinforcing the political values of self-sufficiency, improvement, and health. They raised the spirits and restored the soul - most 'important in this district of hard living' *(fig. 89)*.[59]

The inter-war period saw increased efforts to extend street tree planting. Questions were asked in the House of Commons about planting trees along all new roads and replacing them after road widening, and it was agreed this was desirable, if funds permitted. However, the suggestion of planting fruit trees, as happened in France and Germany, was not met with enthusiasm; assurance would be needed that the fruit would not be stolen.[60] In 1926 the County Surveyor for Middlesex reported that 19 miles of the Great West Road, the South Circular and other roads had been planted with 2,984 trees *(fig. 90)*. Unfortunately there had been a 20% mortality rate, probably due to the fact that the planting had taken place in spring, not autumn.[61]

In 1929 the Roads Beautification Association was set up at the invitation of the Ministry of Transport to advise local authorities and the Ministry on roadside planting. A children's branch was also set up to give them opportunities to become involved and Children's Cherry Tree Avenues were planted across the country.[62] It was hoped that a short Bill would enable the Road Fund to be used for roadside tree planting and to enable local authorities to spend money on this.[63] The Roads Improvement Act 1925 granted local authorities certain powers and in 1925 the Ministry of Transport called a conference of representatives of the London home counties to discuss roadside tree planting and to encourage County Councils to exercise those powers.[64]

The need for expert advice for local authorities and for those responsible for street trees galvanised the publication of a number of books, of which one of the most comprehensive was A. D. C. le Sueur's, *The Care and Repair of Ornamental Trees in Garden, Park and Street*, 1934.[65] Le Sueur was Consultant in Forestry to the Corporation of the City of London and lecturer in Forestry at the Royal Agricultural College, Cirencester. His book was in effect a handbook for the successful planting and management of street trees in a range of urban situations: old established streets, new suburbs, shopping, business, manufacturing and residential districts. It considered the effects of climate, the aspect of streets, soil and gradient. He suggested 'alternate planting' in narrow streets, planting each specimen opposite the centre of a gap on the other side, though he recognised the problem of imbalance at road junctions. He also recognised the threats posed by increasing traffic and the problems presented by double-decker buses. Basically his message was that street trees must be selected with three objectives in mind: they must suit the position; the position must suit them; they must be beautiful, shade giving and easy to cultivate.

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Acknowledgements

I would like to thank the following for their help and encouragement: Herbarium Library staff, Royal Botanic Gardens, Kew; Joyce Bellamy; Virginia Hinze; Fiona Jamieson; Todd Longstaffe-Gowan; Jackie Nayman and Sally Williams.

F i n i s

58. This 20 acre site and small manor house had been acquired by Dr Salter and became the first maternity convalescent home in the country.
59. E. Lebas, 'The Making of a Socialist Arcadia: Arboriculture and Horticulture in the London Borough of Bermondsey after the Great War', *Garden History*, Vol. 27, No.2, 1999, pp.231-6.
60. *GC*, 12 July 1923, p.16.
61. *GC*, 4 December 1926, p.442.
62. *GC*, 29 November 1930, p.441.
63. *GC*, 17 May 1924, p.281.
64. *GC*, 19 December 1925, p.475.
65. A. D. C. le Sueur, *op. cit.*