



Greening Up

Practical recommendations

September 224





Strand Aldwych Public Realm, Westminster

How to 'green up'

Accept that you will need to 'sell' the idea of trees and urban greenery and sway minds along the way

- *Be clear why you want to bring urban greenery to a particular place.* Which particular benefits are you hoping for? Which will you prioritise in your conversations? Ideally use the arguments with the strongest evidence base (climate emergency, physical and mental health, road casualty reduction, placemaking). These will then direct you to departments with greater political influence at a local level, as well as budgets. (See our Hackney, Chatham and Enfield case studies).
- *Identify the officers and decision makers who own these agendas.* Appeal to them with a project outline that could help them meaningfully meet their targets and spend their budgets (see our Chatham case study). Some examples:
 - Find out what your area's canopy cover is and its distribution (including areas of particularly high deprivation) and if the Council has set targets to improve it. Use low levels of cover as an argument for greater tree planting. Many Councils have published their canopy cover figures, otherwise the Forestry Commission's tree canopy cover map is a good place to start.¹
 - Understand environmental targets in your area, air pollution levels, rates of air quality related diseases in your area and reduction targets. For example, almost every authority has designated Air Quality Management Areas (AQMAs).² Can these be used to justify greater greening of particular areas?
 - Are there any road casualty reduction schemes? Link the presence of trees to slower traffic and highlight the opportunities to incorporate greenery into traffic calming measures.
- *Find an ally 'on the inside.'* If you wish to plant along a highway, try and identify a transport engineer within the Council who is favourable to trees. In many examples community groups have found an ally who has been able to include tree pits or SuDS under the radar or somewhat hidden as part of their wider projects.
- *If need be, start small and set a precedent.* Even one tree pit or well-maintained planters can show that you are competent and can be trusted with further planting. 'Our hardest sell was the very first tree pit but once the housing association saw that we knew what we were doing they started to trust us and they will let us plant anywhere on their estates now' - Jackson Fraser-Hague, Arches Local Community Group
- *Localise your greening up.* Connect it meaningfully to the community, not high-level targets. Planting 500 whips (very small trees) in a park five miles away may hit local canopy cover targets, but it will not address air quality in your neighbourhood, or the lack of biodiversity in your town centre. Instead, bring greenery to residents and focus on planting in high-footfall locations where it will have the most impact and be most appreciated. A good example of this was the Clapton Park, or 'Poppy,' Estate. John Little, whose company led grounds maintenance on the estate, started sowing poppies by bus stops and bus routes on the edge of the estate. This simple yet effective intervention let passers-by know that something good was happening on the estate. (See Poppy Estate case study).



The now famous poppies aligning the bus stop. Residents of the estate picking grape vine leaves for stuffing and making into Dolma Grass Roof Company. Clapton Park (Poppy) Estate, London.

- *Dont assume knowledge of greening up successes.* Don't expect your local politician, landowner, house builder or even residents to share your interest in greening up, or to be aware of what is possible and what has worked elsewhere. Show examples of successful projects, use the case studies listed here, or if possible, organise a field trip to see them first hand. Reach out for advice to the many groups (listed below) who have regreened their streets and would be keen to share their knowledge.
- *Know what is what.* Make sure you know the difference between the law, guidance, and urban myth (see urban myths table). Arm yourself with facts and precedents and know what the law gives you the right to do. There are provisions in the Highways Act that allow residents (Section 142) and parish or community councils (Section 96(5)) to plant in highway land under licence.
- *Anticipate common objections.* Address these head on and accept that some trees can cause problems. Anything can! But know that there should be a solution to most common concerns.

Urban trees and greenery have many benefits or 'ecosystems services,' but they can also bring problems or 'ecosystem disservices.' To many they are beautiful and essential infrastructure. However, to others they can be a nuisance, unsafe or scary. Some of these concerns are very reasonable. Some are perhaps less so, but all need serious consideration.

The urban myths of greening up and how to answer them...

| Common Concerns (or Urban Myths) | Possible Responses |
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| <i>Trees will block the light from my windows.</i> | <p>You can choose trees that grow to a specific height and with a smaller canopy.</p> <p>Trees do not fully block light, and most are deciduous so will only provide shade in summer when it will probably be welcome.</p> |
| <i>The fruit from trees will cause a mess on the windscreen of my car.</i> | <p>This comes down to selecting the right type of tree. Male trees do not produce 'fruit' or seeds and not all fruit produced by trees is messy.³ However, using only male trees results in more pollen, problematic for those suffering from hay fever or allergies.</p> <p>Urban orchards (vs. streets) are often the best places for fruit trees</p> |
| <i>Having a tree will take up parking spaces in front of my business and stop people visiting.</i> | <p>The nature of a place and how pleasant it is to be in can often be more of a driver of footfall than car parking. Trees and greenery are the most effective way of improving the quality of a place, resulting in people wanting to spend more time there. There is good evidence to support this, as discussed in Chapter 1.</p> <p>Parking and greenery can easily coexist, and a tree pit will only take up a fraction of a parking space.</p> |
| <i>Trees will take up too much space on the pavement and stop wheelchairs and prams using them</i> | <p>Greening options can be tailored to the specific site. There is something suitable for every space.</p> <p>If planting in the pavement isn't possible, then look at build outs in the carriageway.</p> |
| <i>Tree roots will cause problems with the foundations of my house, particularly subsidence</i> | <p>Tree root damage can be either indirect or direct. Direct damage from roots is rare. The main cause of indirect damage is subsidence. This is mainly an issue where there are shrinkable soils, mainly clays, not merely by the presence of trees. There are multiple other factors, such as climate, changes to the permeability of surfacing, the depth and quality of foundations. The British Geological Survey maps can be used to identify where shrinkable soils are present.⁴</p> <p>Again, this comes down to selecting the right kind of tree and good planting practice, such as using root deflectors and barriers, and providing adequately sized tree pits.</p> <p>There are countless trees coexisting with buildings and not causing any issues, so listen to and trust the experts and get the right advice before planting.</p> |

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| <p><i>We have lots of utilities underground here so cannot have roots interfering with them and running the risk of breaking them.</i></p> | <p>With careful planning, trees can be planted so as not to interfere with utilities. Trees can be found on some of the most utility congested streets. Simple solutions such as root barriers can mitigate against any potential damage.</p> <p>There is very little evidence of trees actually breaking pipes. The most common damage caused by roots is ingress into pipes that are already damaged.</p> |
| <p><i>The roots of trees push up the pavement surface and make it difficult to push buggies and wheelchairs.</i></p> | <p>Appropriate tree pits and tree species selection can minimise the risk of pavement damage. Roots coming up to the surface are normally looking for air and water, so using permeable materials and adequately sized tree pits will prevent this.</p> <p>Where roots have damaged pavements, there are ways to repair the damage and reconstruct pavements to prevent future damage. See TDAG's Trees in Hard Landscapes (case study 19, p.123)</p> <p>Trees can also be planted on 'build outs' to ensure pavement space is not lost.</p> |
| <p><i>We have tried to plant trees in the past, but they have been vandalised.</i></p> | <p>Plant 'standards.' These are stronger, taller trees (normally over 2m) and are less likely to be vandalised.</p> <p>If you plant them with the community and give them ownership, then we have found that they are less likely to be vandalised. Involving children and families is especially effective.</p> <p>Displaying information about the greenery has been planted and by whom is a method Abundance London uses very effectively to engage the community.</p> <p>A tree guard should be installed to protect the tree while it establishes. This can be as simple as some wire mesh affixed to wooden stakes.</p> |
| <p><i>We have planted trees, but they died</i></p> | <p>Trees do need nurturing in the first three to five years of life (as a minimum) so it is important early on to establish how they will be watered and prepare a consistent watering schedule. Too little water shortens both the lifespan and growth of the tree, but too much water can create anaerobic conditions (no oxygen) which are lethal to roots. The soil and surfacing around the tree needs to allow infiltration of air and water into the roots, allow adequate drainage while retaining enough water to keep the tree healthy.</p> <p>Disease and vandalism also lead to the death of trees. Species selection is important, and trees should be sourced responsibly, ideally from a UK based nursery with a clear biosecurity process.</p> <p>The advice of a tree expert is well worth paying for.</p> |



Rain garden, Waltham Forest

Image: Meristem Design

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| <p><i>Trees cost so much to plant, but mostly to maintain</i></p> | <p>It is true that trees are an investment, and an area does need to be sure that it can look after a tree in the long term. However, trees themselves are relatively inexpensive, and there are low-cost ways to plant them if you don't let perfect be the enemy of the good.</p> <p>There are also ways to think about maintenance. For example, brokering a deal with local businesses and residents to adopt a tree and take on maintenance.</p> <p>The maintenance that is needed at a minimum is 1. watering in the first 3 seasons (~40litres per tree/week) and 2. canopy lifting (aka lower branch removal) after the first few years</p> <p>If trees do turn out to be too expensive, then there is a greening option to suit every budget. De-paving and 'wilding' a small area can cost a fraction of trees and have a big impact. Planters and pots are a quick and affordable way of delivering greenery and can be crowd sourced.</p> |
| <p><i>It takes so many years to get the environmental benefit of trees that it's not worth it / we're better off with an air filtering artificial tree (E.g. A CityTree) / too late for the climate emergency.</i></p> | <p>As the old adage goes: "The best time to plant a tree was 20 years ago. The second best time is now." It is true that the more mature a tree. the greater its benefits. However, even small trees start to provide benefits, and even the youngest trees blossom in spring.</p> <p>If budget allows plant 'standard' trees that are older and bigger (over 2m, about 5 years old) as opposed to 'whips' (less than 1m tall, unbranched tree of 2-3years old).</p> |
| <p><i>Why aren't you spending our tax money on more important things? I want a job not a tree!</i></p> | <p>Planting trees is a job! The UK has a shortage of skills and capacity in arboriculture. The more money we have to plant, then the more green jobs there will be. Trees and greenery provide so many benefits, from mitigating climate change and filtering dirty air to beautifying our streets and improving our health and wellbeing, all of which have an associated economic return. In other words, trees are a good investment and reduce pressure on the public purse.</p> |
| <p><i>It's not good for trees to be trapped in concrete and tarmac, and you won't offset the carbon from digging tree pits</i></p> | <p>While this is largely true, planting trees is not only about climate change. All the other benefits for people, place and planet far outweigh any potential drawbacks. Trees also provide services such as cooling and runoff reduction that would otherwise require carbon intensive solutions. New methods of planting street trees, such as 'Stockholm' tree pits and linked tree trenches, result in healthier trees. However, don't let the perfect solution get in the way of a good one (especially in hard landscapes), and always focus on the bigger picture; that greenery brings joy and makes us healthier and happier too.</p> |



Find ways for trees to co-exist with utilities

Retrofitting trees and planting into existing streets, or de-paving, can seem daunting. Streets are dominated by tarmac and asphalt surfacing, with a tangle of utilities below ground such as gas, water, electric, telecoms and sewers, to name a few. This shouldn't put you off trying to plant, and going from grey to green is always worth the extra effort.

- *Understand what is underground as early as possible.* All utility companies and local authorities keep up to date (updated every 3 months) record drawings of their pipes and cables. You can request these records directly, but it is easier to buy them from a third party company who will undertake a comprehensive search and compile all the information for you. This includes:
 - Atkins Utility Solutions: <https://utilityolutions.atkinsglobal.com/>
 - Landmark Information Group: <https://www.landmark.co.uk/products/utilities-report/>
 - Stat-Search.co.uk: <https://stats-search.co.uk/>
 - Laser Surveys: <https://www.lasersurveys.co.uk/services/utility-record-searches/>
 - Emapsite: <https://www.emapsite.com/reports/utility-search-reports>
 - Many other options are available. Just make sure that the report is 'PAS 128' compliant.⁵

Alternatively approach your Council for information or a local utility company which might be able to obtain them for you. In Grimsby, for example, Cadent Gas kindly volunteered their support to a tree planting programme by providing utility records and undertaking scans before 30 trees were planted in a local park.

- *Don't trust. Scan!.* Utilities records plans are not accurate, and some cables and pipes may not be charted at all, so before any hole is dug the area should be scanned for obstructions. The most common way of doing this is by using a CAT (Cable Avoidance Tool) scanner and a 'genny' (signal generator). This must be undertaken by a qualified technician, and HSE guidance must be followed and⁶ be done by someone trained to use a CAT scanner. Professionals can be hired or, as in the case of Arches Local, you can buy a scanner and get certified yourself (!) (See Chatham case study). If you have the budget, a detailed survey can be undertaken to map out all the utilities to a good degree of accuracy and help you plan the planting. These are sometimes undertaken by other utility companies, highways authorities and developers, so it might be possible to piggyback on their surveys. Any such utility survey should be 'PAS 128' compliant.
- *Choose the easiest places to plant.* Plant in the places of least resistance. There is a significant difference between planting in soft and hard landscapes, and it is generally far easier to plant on grass verges or other adjacent areas of soft landscaping. Planting in the street, in build outs or in the pavement, will have greater benefits but is harder to achieve (not just technically but also because of permissions and ownership...)
- *Ownership matters.* Ownership and status of the land is also a big consideration. In order of least restrictions to most restrictions, the most suitable areas to plant are as follows:
 - Private land, under your control.
 - Private land, under third party control
 - Public land, non highway (e.g. parks, housing or schools)
 - Public highway – verges
 - Public highway – pavements

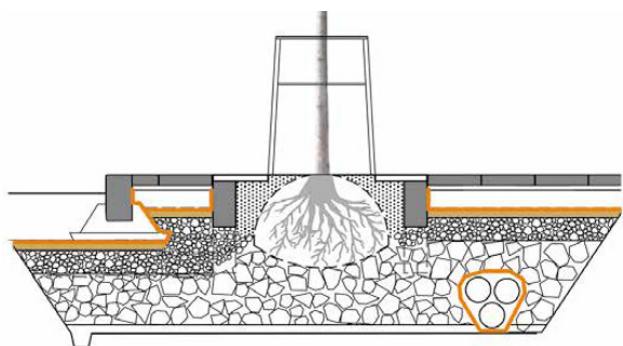
- Public highway – carriageway
- *What costs money?* Understand the costs and process associated with planting in hard surfaces. These include:
 - Scanning for utilities.
 - Getting permits and licences in place to do the work.
 - Excavation and disposal of concrete, tarmac and subsoil.
 - Building a tree pit, and installing components such as root deflectors, tree guards, etc. (See TDAG's Trees in Hard Landscape guide. <https://www.tdag.org.uk/trees-in-hard-landscapes.html>. From page 91)
 - Reinstating the paving

If planting in highway land, then an approved contractor will need to undertake the work. Most highways authorities will have standard construction details and standard cost rates for installation of tree pits, so see if you can get hold of these.

- *There is an answer.* There are engineering solutions to most problems, particularly utilities. For example, systems such as 'Stockholm' tree pits use a 'structural' soil mix, made up of stone aggregate and compost, to avoid compaction of soil and to give space for roots to grow.⁷ These systems are very flexible and can be built around existing utilities. Other protection measures include root barriers and root deflectors, and drains and sewers can be lined internally to protect against root ingress. The TDAG publication 'Trees in Hard Landscapes' offers a comprehensive guide to different tree planting systems.⁸
- *Find out what street works are due locally.* Try to piggyback off these improvement programmes. Contact the Council's street works coordination team. Encourage tree planting along any street or road where improvements are due to be carried

out. This way, some of the bigger overheads such as utility scans and the costs of excavation and reinstating, are already budgeted for. Examples of possible works include:

- Laying of fibre optic cables
- Laying or replacing of gas or water mains or sewers
- Pavement or road resurfacing
- Installation of electric charging points.



Section through a 'Stockholm' tree pit



Community-planted trees in Chatham

Ask for permission not forgiveness (normally)

- *Find out who owns and/or controls the land*
Approach them directly to understand their readiness to regreen an area and give permission for planting on their land. If it is the Council, which department has responsibility? If it is a housing association which manager is responsible? If it is a private landowner or residents, what are their aims and concerns? For private land, ownership can easily be ascertained from the Land Registry website for a small fee (£3).⁹
- *Who can say yes or no?* Find out who else you need permission from to break ground. Most streets are adopted (owned and managed) by the local highways authority. This will be either the county council, or a unitary council (such as a city or metropolitan council or London borough). In London, the strategic road network or 'red routes' are owned and managed by TfL. If there are utilities underground, approach them as soon as possible. Approach residents' groups to understand attitudes to tree planting.
- *Move if you must.* If gaining permission is proving difficult on a particular site, don't be afraid to start small by choosing an 'easier' but key site. Set a precedent to demonstrate value, gain support and then expand the programme. For example:
 - If planting in hard surfaces is too complex, start by planting in verges or in a park
 - If trees prove too difficult, start with smaller scale greenery, such as planters or flower beds.
- *Prove competence.* Do as much preparation as you can before approaching the Council (or landowner). If planting in hard surfaces is too complex, start by planting in verges or in a park
 - *Evaluate sites for potential tree planting yourself.* Are there manhole covers? Examine available utilities maps to see if there are utilities there. Scan for utilities if you have the resources. Check the pavement widths to see what space is available for trees.
- *Suggest species for the location.* This might be a good use of a little budget, so seek professional advice.
- *Produce a watering plan for the first three years.* Who will do it and how will they access the water? (Ensure you have an outside tap near the trees). Who will water in summer months when trees need it most and many people are away? Worry about August! Consider contracting watering out to expert contractors.
- *Build strong relationships* beyond your immediate community group to ease the process of gaining permission.
 - *Work with children.* Is a local school willing to let you store your trees or goods whilst you prepare to plant? Can you involve children in planting to gain wider support for greening an area?
 - *Work with housing associations.* Could a local housing association provide labour, equipment and materials? Could they allow planting on their land?
 - *Work with utilities.* Could a utility company doing works in the area contribute time and expertise as part of its community outreach programmes?
 - *Work with experts.* Can you partner with other organisations with a track record of planting? For example, Trees for Cities and Trees for Streets.

How to win funding

- *Go where the money is.* Piggyback off funding pots that are currently being prioritised and well-funded, such as transport or flood prevention. See the case study in Hackney which hypothecated parking revenue to fund environmental improvements through mass tree planting across the borough. Alternatively, Enfield Council used flood risk mitigation funding to plant trees and create rain gardens and wetlands.
- *Find auxiliary funding.* Look for funding pots that will contribute to the planning and design of the scheme. Very often the planning and design is not paid for (the Urban Tree Challenge Fund for example). However, site visits, species selection and location choice are critical to ensuring successful long-term success.
- *Ask far and wide.* Crowd funding is a great way of raising funding, and many fund raising platforms are available. Consider a programme of sponsorship for individual trees, for both individuals and businesses.
- *Don't forget about pre- and post-planting costs.* Do your homework on the total costs of planning and planting in your location, in particular the costs of planting in soft versus hard surfaces. Don't forget to include the cost of organising and setting up a robust watering and maintenance programme for the first three to five years.
- *When will you get paid?* Be aware that many funds will only pay after you have purchased and planted your trees and you may need additional cash flow until you receive the funds. How will you make good the difference?
- *Find friends.* Partner with umbrella organisation to apply for funds on your behalf. For example, Trees for Cities or Trees for Streets. They charge an admin fee but might ease your application process.

Stewarding: a tree is for life. Who will take care of it?

- *Reverse the telescope.* Start with the required stewardship of your planting and work backwards. Not the other way around. Trees will need an intensive and regular watering programme for the first three years. Other forms of greenery will need regular trimming so as not to become overgrown. Do you have the necessary resources? You will need a budget (to purchase watering and maintenance supplies) and labour (to water and trim). Some groups take on the watering themselves. Others organise teams of volunteers to take on the task at a level of commitment that suits them.
- *Play it safe when you can.* To increase the likelihood of survival, plant older, more established trees that cannot be easily snapped or vandalised. This may not be necessary in some safer locations.
- *Think 'Public Realm Permanence.'* Focus on resilient planting schemes with the lowest possible oversight and maintenance requirements.
 - 'Hostile' hedgerows (for example choose hawthorn bushes to resist intrusion of litter streets)
 - Plant in the ground rather than in raised beds and planters (avoid paying for a pot and for water. All of this is done for free by the earth and rain if you plant in the ground!)



Grey to Green, Sheffield

Image: Nigel Dunnett

Skillset: knowledge and skills to get greening right

- *You will need to upskill!* There is a shortage of skills in green infrastructure skills across the country and at the local authority level. In the short term this gap is being plugged by community groups, so be prepared to teach yourself the basics. However, there are many groups who have been through similar experiences and are willing to share their knowledge. *What you may need to understand.* The basics you may need to learn are:
 - What funding pots are available
 - The legal rights and restrictions for planting, particularly on highways land
 - How to locate underground services
 - How to select the right species for a location
 - How to construct tree pits and planters
 - How to set up a watering system and schedule.
- *Do reach out to the council but have a Plan 'B.'* Do contact your local tree officer to see what help they can provide. Understand, however, that local tree officers can come in different guises: some are more 'tree surgeons' (concerned with the maintenance of the current stock of trees and focused on risk reduction) and some are the 'gardeners' (actively seeking to increase the greenery and biodiversity of an area).

Top Tips for designing a greening scheme

| Things to consider.... | |
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| Why are you planting? | |
| Which benefits are you trying to prioritise? Do you want to focus on People, Place or Planet, or all three? | <ul style="list-style-type: none"> • Do you want to install rain gardens or de-pave to reduce flooding and improve water quality? Is air quality the main concern, or do you just want to bring some beauty and colour to a local high street or square? • Although greenery always has multiple benefits, focusing on one will help you identify the right funding pots and the right people at the Council to help deliver the scheme. |
| Choosing a location | |
| Where will a tree have the most impact? | <p>Depending on your primary focus, where will planting have the most impact?</p> <ul style="list-style-type: none"> • If your road is a 'canyon,' then planting on both sides can trap pollution beneath. Plant on one side only. • If your street runs east-west then plant on the north side to shade the south facing properties and shade the pavement in summer • Alternating tree planting on either side will prevent the canopy closing over in tall or narrow streets • You can use trees to identify crossing places or plant trees to create meeting places. |

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| Is there space? | <ul style="list-style-type: none"> • Do you have enough space above and below ground to plant a tree and allow it to grow? • How wide is the pavement or verge? As a rule of thumb, a minimum clear width of 1.0m, and ideally 1.5m, should be maintained along pavements for wheelchairs and buggies. • If trees won't fit, there is always a greening solution to suit the available space. • If you are proposing to plant in the carriageway, is it still going to be wide enough for vehicles to safely pass? |
| Soft or hard surfaces? | <ul style="list-style-type: none"> • Hard surfaces are harder and more expensive to plant in, so you might need to prioritise planting in 'soft' areas such as verges. You can always plant more in the future, so it's not a bad idea to focus on the quick wins to start with. |
| What are potential barriers to greening this street? | <ul style="list-style-type: none"> • Are utilities an issue? Before you obtain records, look out for manhole covers, telegraph poles, inspection chamber covers, and the like • Will you be blocking streetlights or CCTV cameras? • Are you restricting visibility for pedestrians and vehicles? • It is a good idea to walk the street with tree officers and highways officers, but don't be afraid to push back on their advice. Not all barriers are real. |
| Start small and innovate | <ul style="list-style-type: none"> • If you can't deliver a permanent solution in your location, start with small scale, temporary greenery. While plant pots and planters need more ongoing maintenance, especially watering, they are a quick and easy way of adding greenery. There is a solution for every situation, and every space and every surface can be 'greened up.' |
| Plant in resilience | <ul style="list-style-type: none"> • Consider planting species that can tolerate drought and floods and heat waves • A tree planted in the street will endure far more stress than a tree in soft landscaping, so choose the species carefully. |
| <i>Choosing what to plant</i> | |
| Surrounding landscape | <ul style="list-style-type: none"> • What trees or greenery are traditionally used in the area? What would complement the existing landscape? Refer to TDAG's Species guide. https://www.tdag.org.uk/tree-species-selection-for-green-infrastructure.html |

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| | <ul style="list-style-type: none"> • Also see RHS guidance on species choice • Also be aware of how trees will respond to climate change locally. For example, the Forestry Commission no longer recommend planting birch trees in Southern England |
| Quality and type of soil | <ul style="list-style-type: none"> • Understand soil type and ability to maintain moisture levels required for growth. Not all areas are able to sustain fully grown trees without the need for extensive irrigation • Wildflowers are most suited to degraded soil environments and are seen as a 'go-to' solution by many Councils in any context. (They are relatively cheap and low maintenance). |
| Sightlines | <ul style="list-style-type: none"> • In some cases these will need to be maintained (e.g. CCTV cameras, or at street junctions) and so will affect the type and size of greenery to plant. |
| Cars | <ul style="list-style-type: none"> • What impact might trees or greenery have on parking? If parking is likely to be contentious, can you plant without impacting on spaces? Note that fruit and pods can wreak havoc on cars. |
| Enclosure | <ul style="list-style-type: none"> • What trees will provide the right enclosure on the street? What will be the trees' height in proportion to the width of the intervening public space and buildings?. • On wider streets, trees are useful for helping provide this sense of enclosure, but on narrower streets large trees can be overwhelming. |
| Trees are best.... | <ul style="list-style-type: none"> • ...but don't obsess over trees. There are many other greening options to suit any location. |
| Grass and wildflowers | <ul style="list-style-type: none"> • Consider planting wildflowers instead of grass in some areas. This will reduce costs as grass requires extensive mowing. However, leave space to play and sit on grass and ensure wildflowers are still maintained. |
| Anti-social behaviour (from dogs and humans!) | <ul style="list-style-type: none"> • Plant hostile hedgerows or repellent shrubs or trees which dogs or humans don't like (or will find hard to throw beer cans into!). Suggested species include: • Trees – Species within the Abies (Fir) or Taxus (Yew) genus. • Shrubs – Species within the Berberis or Pyracantha genus. These can be planted at the base of a tree, or in tricky and left over spaces. |
| Sustainable urban drainage solutions (SuDS) wherever possible | <ul style="list-style-type: none"> • The great expanses of impervious surfaces in urban areas invariably lead to surface water flooding and pollution of watercourses |

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| | <ul style="list-style-type: none"> • Sustainable Drainage Systems (SuDS) are one of the best tools to combat this. Most SuDS solutions have the added advantage of being very green. • Solutions include rain gardens that receive runoff from the street, irrigating the plants while intercepting runoff. Tree pits can be constructed with kerb inlets to receive runoff in a similar fashion. • Buildings can incorporate green and blue roofs which intercept rainfall and provide biodiversity, but obviously are not visible from the street • Green walls can be constructed to reuse harvested roof water for irrigation. However, these are expensive to install and maintain. |
| Canopy shape | <ul style="list-style-type: none"> • Do you want to cut out light and provide shade (to counter the heat island effect) or do you want minimum shade? • 'Fastigate' (upright) trees (e.g. Pine or Cypress trees) are an appropriate shape for street planting as they are upright and have a narrow profile, but they provide less shading. See guide here: https://www.barrelltreecare.co.uk/assets/Uploads/BTC17-Fastigate.pdf • Wider canopy trees will provide more shading |
| Root size | <ul style="list-style-type: none"> • Do you have space to accommodate the roots? • This will inform the species selection, and the design and specification of tree pits • Solutions such as Stockholm tree pits can be used to provide a greater volume for roots to grow in, but can be expensive. |
| Male versus female trees | <ul style="list-style-type: none"> • Male trees produce pollen which can cause problems for allergy sufferers • Female trees drop seeds and pods which can cause a nasty mess on cars and pavements • However, many native species are monoecious, meaning they have both male and female reproductive organs. |
| Planted tree pits | <ul style="list-style-type: none"> • To provide enhanced biodiversity and increase the visual impact, plant tree pits with flowers and ground cover planting, but include a bordered edge. |
| Tree stumps as sit stops or planters | <ul style="list-style-type: none"> • If you really do have to cut down a tree, always turn the tree stump into a 'sit stop' or planter to create a moment of delight rather than a moment of sadness. |



Old Ford Road, Bethnal Green

Repurposing tree stumps



Whip or Sapling



Small tree grown from seed, with no branches and which has had no pruning or training. Whips are used as an economical way to plant a large number of trees or a hedgerow.

- ~0.5m to 1m tall
- 1-3 years old

Standards



Larger, established tree that has been trained and pruned over 2-5 years to have a long, clear stem. Some will have a crown of foliage (or defined canopy) whose shape can then be maintained.

- 1.8m (6ft) tall clear trunk, with 8-10cm girth
- 2-5 years old



Rain gardens



Grangetown rain gardens, Cardiff



Kerbside parklet



Grangetown rain gardens, Cardiff



SuDS Pod



Floating reed beds



Springhill Cohousing



Kenmont Gardens

Endnotes

- 1 The Forestry Commission, Canopy Cover Webmap: <https://www.forestryresearch.gov.uk/research/i-tree-eco/uk-urban-canopy-cover/>
- 2 DEFRA AQMAs interactive map <https://uk-air.defra.gov.uk/aqma/maps/>
- 3 Many native species are monoecious, meaning they have both male and female reproductive organs, as opposed to dioecious (having separate male and female trees).
- 4 British Geological Survey – Swelling and shrinking soils: <https://www.bgs.ac.uk/geology-projects/shallow-geohazards/clay-shrink-swell/>
- 5 BSI (2022) *PAS128:2022 Underground utility detection, verification and location*.
- 6 Health and Safety Executive (2014) *HSG47 (third edition) - Avoiding danger from underground services*
- 7 Stockholms stad (2017) *Plant beds in Stockholm city – a handbook*
- 8 TDAG (2014) *Trees in Hard Landscapes*
- 9 Land Registry property information service: <https://www.gov.uk/search-property-information-land-registry>

Images on page 21 courtesy of:

- Biomatrix
- GreenBlue
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Coal Drops Yard, King's Cross

