



LUND TRUST SUMMER INTERN REPORT 2021 – URBAN GREEN SPACE

Contents

Introduction	2
Research Questions.....	2
Methodology	2
Urban Green Spaces: Definitions and Types	3
London Context	5
How can urban green spaces help address London’s environmental challenges, and what social benefits can they bring?	6
Environmental Challenges	6
Biodiversity Depletion	6
Air Pollution	7
Heat risk	9
Flood Risk.....	10
Social benefits	12
Wellbeing – Mental and Physical	12
Community Cohesion and Engagement.....	13
How do we ensure the effectiveness of urban green space projects?	14
Context: national, London-wide, and local policy	14
Existing guidance and Lund Trust	16
Access Standards and Minimum Quotas	18
Design Standards and Guidance for Green Spaces.....	19
What are some of the challenges with project implementation, and how can these be addressed?.....	20
How should Lund Trust approach funding urban greening projects in London?	24
Appendix	27



Introduction

This report will provide initial research and recommendations for Lund Trust's future urban green space funding programme in London. The conclusions and guidance offered by the report should be a starting point for implementing the programme, as well as suggesting future research. The initial criteria for the funding programme were based on Lund's 'Sussex Lund' scheme, which takes place in the High Weald AONB.

The initial brief stipulated the programme should:

- Fund transformative work that improves landscape and ecology;
- Support one-off projects, and should not be used for maintenance;
- Be open to all to apply;
- Inspire wider change;
- Have a funding budget of £250,000 a year; and
- Be a regranting programme, involving collaboration with one or more organizations.

This report evaluates this initial brief to see what is applicable to a London-based urban greening project, and what parts of the brief need to be changed or redeveloped.

Research Questions

To provide the recommendations for the funding programme, I created three research questions to guide the report.

- 1. How can urban green spaces help address London's environmental challenges, and what social benefits can they bring?**
- 2. How can we ensure the effectiveness of urban greening programmes?**
- 3. How should Lund Trust approach urban greening projects in London?**

These research questions allow for an exploration of the benefits of green space, how those benefits can be maximised, the policy context for urban green spaces, the value of existing guidance, and challenges greening projects face.

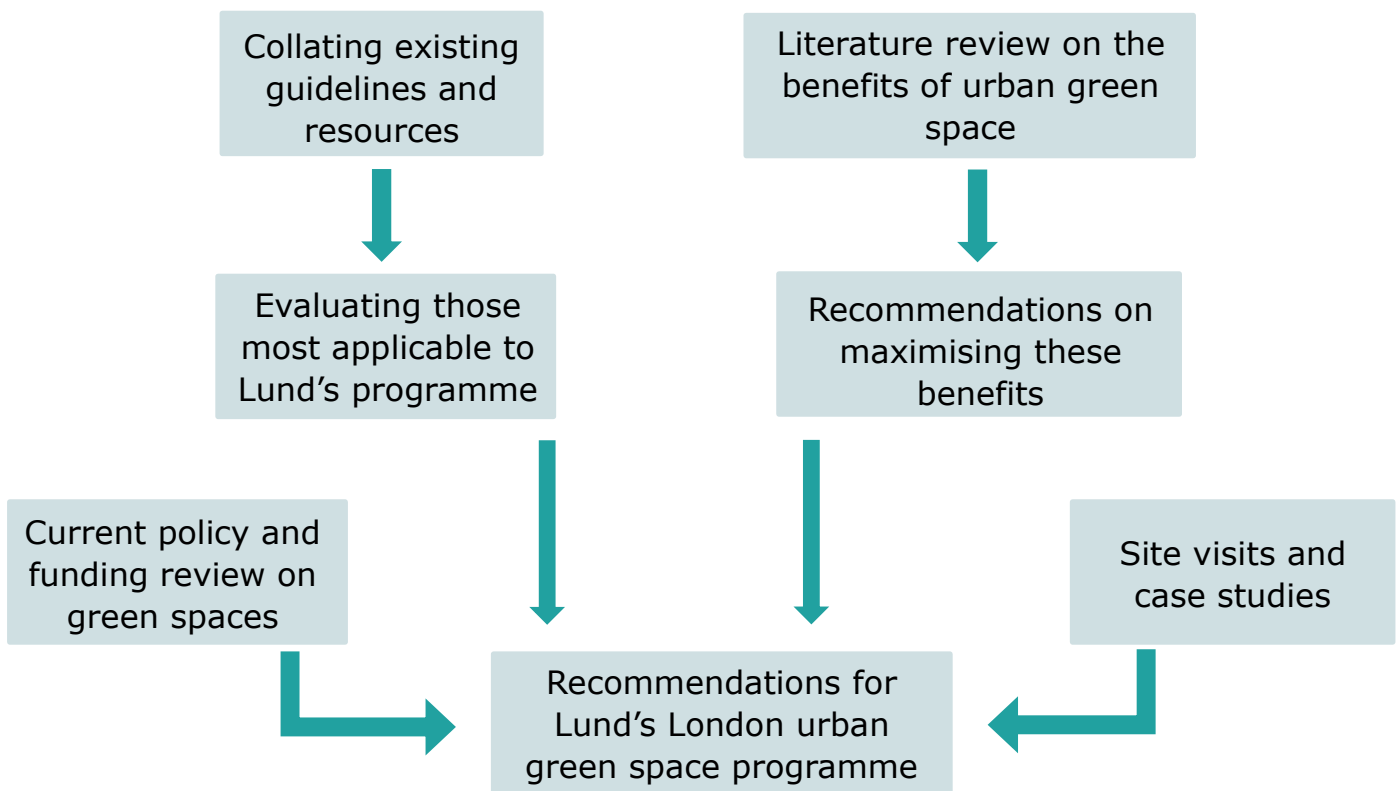
Methodology

Most of the research I undertook was desk-based, evaluating current guidelines, resources, policies, and academic literature on urban green spaces and their



implementation. Where relevant, I have also included case studies to demonstrate successful greening projects. While not a core part of my methodology, I also carried out site visits to various green spaces, including established and in-progress greening projects. With some site visits, I had the opportunity to carry out informal conversations with those running or managing the projects, which gave me valuable insight, although these conversations were not a formal part of my methodology.

The flow chart below shows the components of research that came together to inform my recommendations for the funding programme.



Urban Green Spaces: Definitions and Types

Urban greening is the process of incorporating vegetation and/or green open spaces into urban environments. Urban green spaces are traditionally defined as open spaces with vegetation, although the increasing integration of small-scale greening into urban infrastructure also increases the amount of urban green space in the city.

Urban greening is sometimes used interchangeably with green infrastructure. Green infrastructure refers to a strategic network of green spaces integrated into urban areas that benefit people and the environment. This definition is broader and will typically include projects like greening of buildings.



URBAN GREEN SPACE REPORT

The table below gives an overview of the different types of urban greening.

Category of green space	Definition	Examples	Image
Greening of buildings	Greening attached to buildings and infrastructure.	Green walls and green rooftops.	
Street-based greening	Street-level greening outside and in between open spaces and existing infrastructure.	Street trees, green verges, green corridors.	
Urban parks	Publicly accessible open green spaces set aside for recreation.	Pocket parks, large urban parks, historical parks.	



URBAN GREEN SPACE REPORT

Neighbourhood green spaces

Semi-public green spaces, similar to urban parks.

Estate courtyards, community gardens, allotments.



'Wilder' spaces

Green spaces with a focus on nature and habitat preservation.

Nature reserves, wetlands, grasslands, meadows.



It is important to note that there is significant overlap between different types of green spaces, such as wilder spaces within larger parks, or pocket parks being considered street greening and vice versa. This table is not intended to be exhaustive, but instead give an overview of the variable types of green space.

London Context

London benefits from an expansive network of green spaces. It is estimated that 47% of London is green space, generating significant ecosystem benefits for the city. Additionally, London contains over 8 million trees, making it the world's largest urban forest. In 2019, the Mayor of London declared London the world's first National Park City¹, bolstering a campaign to increase the quantity and quality of urban green space in London. The COVID-19 pandemic has also emphasised the

¹ [London National Park City | London City Hall](#)



importance of green spaces in cities, with 40% of adults reporting they have spent more time in nature than before the pandemic².

However, there are still several problems with London's green spaces. While 47% of London may be green space, only 18% is publicly accessible³. Additionally, this access is not equal geographically or demographically. For example, areas with high BAME populations are less likely to have access to public green spaces⁴. Unequal distribution of green space therefore means unequal benefits. There is also financial pressure on urban green spaces – in the past 10 years, funding has decreased by 30%⁵. In the long term, London's green spaces will also be vulnerable to climate change due to increased risk of drought and flooding.

London already benefits from a broad network of green spaces. Although they face numerous challenges, London can fund new projects connecting and bolstering London's green spaces.

How can urban green spaces help address London's environmental challenges, and what social benefits can they bring?

Environmental Challenges

London faces several environmental problems, which impact its residents, businesses, and local climate. They will increase as London continues to urbanise, and climate change will intensify their impacts. This report addresses air pollution, flood risk, heat risk, and biodiversity depletion as major problems. Urban green spaces cannot eliminate these problems, however, they can mitigate some of their impacts, if designed correctly.

Biodiversity Depletion

Urban biodiversity refers to the living, biological diversity of nature in urban areas. Urban green spaces are crucial for supporting biodiversity, as they can provide key habitat that species need to survive. The capacity of urban green spaces to support biodiversity is influenced by size, connectivity with other green spaces, land-use history, biotic interactions, and current management strategy⁶. The location of the green spaces also influences their capacity to support biodiversity, as they are embedded into the larger ecosystem of the city. Typically, urban green spaces are

² [Public love for nature during Covid-19 highlighted by new survey | GOV.UK](#)

³ [The role of green space in London's COVID-19 recovery | RICS](#)

⁴ [England's green space gap | Friends of the Earth UK](#)

⁵ [London Green Spaces Commission Report](#)

⁶ [Biodiversity in the city: key challenges for urban green space management](#)



small patches of land. While 47% of London is classed as green space, 24% is private domestic gardens⁷, which may limit how biodiverse they are, due to varied management practices. In an urban environment, green spaces cannot wholly restore biodiversity to pre-urbanisation levels, however, strategies can be put in place to increase biodiversity locally. The benefits to people of increasing biodiversity levels include engagement with nature and enhanced wellbeing, alongside improvements to the condition of the environment and species preservation.

There is no one-size-fits-all biodiversity strategy for urban green spaces. While approaches vary depending on the size of the green space and the chosen priority area, creating networks of green spaces within the wider city ecosystem is one effective method for boosting biodiversity, as it allows for species to move between habitats, rather than exist in isolated spaces, which is particularly important for those that are mobile such as birds⁸. Another way of increasing biodiversity is strategic planting of suitable plant species into green spaces. Not only does this increase plant biodiversity, it can increase the presence of other species, such as insects. Artificial habitats, including bug hotels and bird boxes, can also be installed to encourage the movement of new species into an area⁹. When encouraging biodiversity, those responsible for green spaces must consider their short- and long-term management strategy. For example, lawns require intensive management strategies and have limited biodiversity capacity. By reducing maintenance to these lawns and 'rewilding' them, the area can become more biodiverse, while also becoming more cost effective.

Air Pollution

Air pollution is the presence of toxic compounds in the air that pose a health risk. These compounds originate from industrial activity, including transportation and construction. London's density creates a strong concentration of air pollution, especially in the city centre and along major roads. The most common pollutants in London are carbon monoxide, nitrogen dioxide, sulphur dioxide and particulate matter. All have their own sources, and unique impacts on human health. A 2019 study showed that 99% of London breached the World Health Organization's recommended safe levels for air pollution¹⁰. This leads to numerous health, social, environmental, and economic costs. In London, the economic costs of air pollution are estimated to be £10.32 billion per year¹¹, based on lost working days, premature deaths, and costs of hospitalisation. Air pollution contributes to an estimated 9,400 premature deaths per year in London¹². It disproportionately

⁷ [Key London Figures | Greenspace Information for Greater London](#)

⁸ [Biodiversity in the City: Fundamental Questions for Understanding the Ecology of Urban Green Spaces for Biodiversity Conservation](#)

⁹ [Biodiversity Management Options](#)

¹⁰ [Air Quality in London | London City Hall](#)

¹¹ [London the worst city in Europe for health costs from air pollution | The Guardian](#)

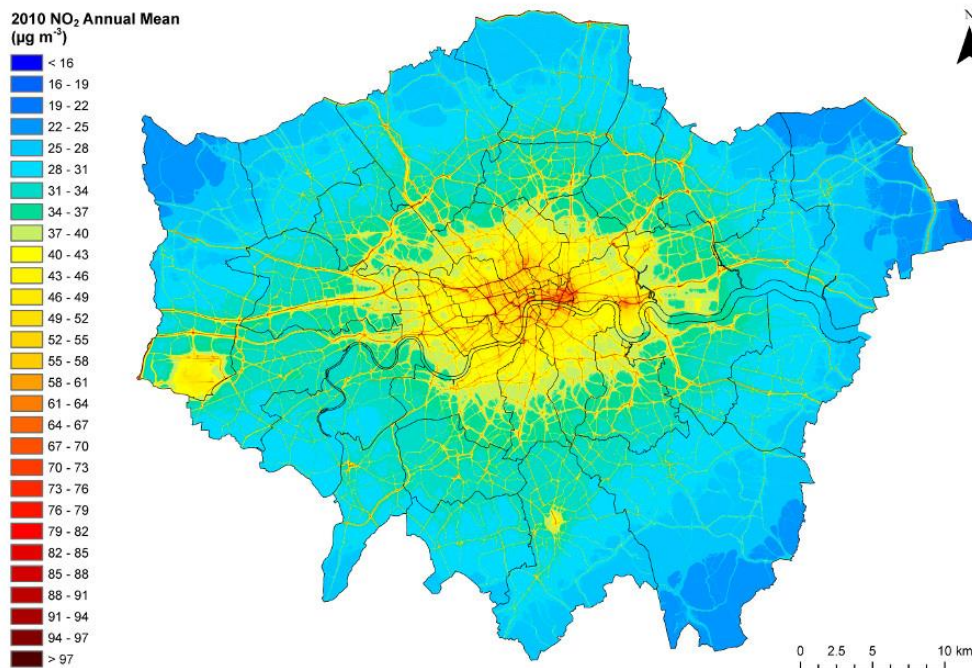
¹² [Air pollution and the effect on our health | London Councils](#)



URBAN GREEN SPACE REPORT

impacts vulnerable groups, including young children, the elderly and those with respiratory diseases. Several policies exist to tackle London's air pollution, including the Ultra-Low Emissions Zone and the introduction of a hybrid-engine bus fleet. However, air pollution remains a major problem for London, concentrated especially around Central London, major roads, and by Heathrow Airport.

Annual mean nitrogen dioxide map for Greater London. [Source: Green Buildings Encyclopedia](#)



Most academic studies have found that urban green space has a mitigating impact on air pollution¹³. This means that trees, shrubs, and other plants absorb pollutants, removing them from the atmosphere and cleaning the air around them. Dense canopies of trees in parks also act as a barrier to reduce air pollution exposure between the street and the open space. Both small and large parks reduce pollution, although the mitigation effect increases with the size of green space. The density, position, and diversity of the tree species in the green space are equally as important as the size of the space for decreasing air pollution.

Trees are effective at absorbing pollutants, especially particulate matter. However, trees can emit their own organic compounds, which react with existing air pollution to create harmful substances (such as ozone). When planting trees, some species are more effective than others at reducing pollution and produce fewer compounds that can react to create ozone. Deciduous trees are particularly effective in reducing air pollution in urban environments. Location of the trees is also important. On narrow and polluted streets, tree canopies trap pollutants at street level, preventing air circulation¹⁴. If trees are placed in a larger open green space,

¹³ [Impact of Green Space on Heat and Air Pollution | David Suzuki Foundation](#)

¹⁴ [Using Green Infrastructure to Protect Against Air Pollution | London City Hall](#)



air can circulate, and trees will have a positive effect. Other greening strategies, such as hedges or green walls, can reduce air pollution on narrow and polluted streets, without trapping the pollutants. Urban green space can also encourage behaviour change. For example, urban green spaces can provide paths away from polluted streets. This should be encouraged where there are likely to be vulnerable groups, such as near primary schools or children's play areas.

The Mayor of London released a [design guide](#) for using green infrastructure to mitigate the effects of air pollution. It offers technical guidance and a flow-chart for those implementing projects, to ensure success in mitigating air pollution, rather than worsening it.

Urban green spaces cannot replace policies for reducing air pollution at its source but should be designed to consider air pollution levels in the local environment, and to try to reduce them.

Case Study: East Sheen Primary School Green Wall

Location: East Sheen, Richmond upon Thames

About: East Sheen Primary School is located on the A205 South Circular Road, one of London's most polluted roads. Air pollution is particularly detrimental to young children, and children were impacted by playing near the polluted road.

Implementation: The Mayor of London Community Green Space Grants awarded £30,000 to the school to install an ivy green screen along the perimeter of the playground, along with planters lining its inward side, in the playground.

Results: Using air pollution monitors, children found that nitrogen dioxide pollution levels in the playground were 50-75% lower than the roadside. Children also learnt about the value of green space and the dangers of air pollution, and the project was integrated into the school's wider environment curriculum.

Source: [Mayor of London](#), [East Sheen Primary School](#)

Heat risk

London, like many other large cities, experiences the urban heat island effect. The urban heat island effect is where metropolitan areas are warmer than the surrounding rural areas. This is caused by the release of waste heat, less vegetation and heat absorption by buildings and infrastructure. Climate change will also increase the urban heat island effect as overall temperatures increase. In London, the effect can cause temperatures to increase by up to 10°C¹⁵. This has social, economic, and environmental costs, including health costs. In 2003, a

¹⁵ [Heat | London City Hall](#)



heatwave in London, made worse by the urban heat island effect, led to approximately 600 deaths¹⁶. Heat risk also varies geographically, depending on existing green space and the intensity of heat-emitting activities. Urban green spaces are one strategy for reducing heat risk.

Urban green spaces mitigate the urban heat island effect in three ways. First, during evapotranspiration, trees absorb heat from the surrounding area to evaporate water. Secondly, trees can reflect solar radiation. Third, they provide shade at ground level. Most academic studies on the urban heat island effect and urban green spaces found urban green spaces provided cooling effects¹⁷. One study found that the daytime temperature in parks were 1°C cooler than surrounding built-up areas¹⁸. Large parks have the biggest impact, including urban cooling benefits beyond the park perimeters, however, networks of connected small parks can break up large pockets of heat. Trees can create urban canopies, causing urban cooling, as temperatures in the shade feel up to 10-15°C cooler than direct sunshine¹⁹, making them particularly beneficial as an urban cooling strategy. Green walls are also effective in reducing heat, especially where street space is limited.

While one individual green space will not impact London's overall urban heat island effect, they can provide needed shade on hot days. To maximise the impact, parks can be designed to create an urban canopy, and to include seating under the canopy (such as benches). Simple tools like thermometers can monitor effectiveness in decreasing the heat.

Flood Risk

London faces three types of flood risk – tidal surges, river flooding, and surface flooding. Tidal surges and river flooding are caused by changes in the Thames and its tributaries. Surface flood risk is more geographically spread out, as it can affect most built up areas. 140,000 Londoners are at high risk of surface flooding, and 230,000 are at medium risk²⁰. Surface flooding occurs in built-up areas as surfaces are not permeable, leading to greater run-off of rainwater into drains, which quickly become overwhelmed. One way to reduce surface flooding is to use sustainable urban drainage systems. These systems slow the movement of water by intercepting it, preventing large quantities of surface run-off, and preventing build-up of water on the surface. Sustainable urban drainage systems are promoted under London's Sustainable Drainage Action Plan²¹. These systems can be integrated into urban green spaces.

¹⁶ Ibid.

¹⁷ [Impact of Green Space on Heat and Air Pollution | David Suzuki Foundation](#)

¹⁸ [Urban greening to cool towns and cities](#)

¹⁹ [Los Angeles confronts its shady divide | National Geographic](#)

²⁰ [Flood risks in London | London City Hall](#)

²¹ [London Sustainable Drainage Action Plan | London City Hall](#)



Where green spaces involve plants and soil, they will be more permeable than paved-over areas. They generally lead to gradual discharge of rainwater and prevent rapid run-off by their nature. Green spaces can be designed to maximise their potential to reduce flood risk. Planting trees can intercept rainfall at canopy level, so it doesn't accumulate at ground level, while mature trees take in large volumes of water from the soil, ensuring it does not become saturated. Retrofitting buildings with green roofs increases the permeability of otherwise impermeable surfaces and can slow the movement of rain from rooftops into drainage systems. Parks can also include sustainable urban drainage strategies. For example, they can implement swales (shallow, vegetated channels or basins that can store excess run-off), infiltration trenches (larger channels for stormwater collection) and permeable pavements (pavements that allow water to seep through, rather than gathering on the surface). These can exist outside of green spaces, however green spaces have the capacity to integrate these features. Green spaces are already part of a wider green drainage system, however, if thoughtfully designed, their potential to prevent flood risk through sustainable urban drainage systems increases.

As part of London's Climate Change Strategy, there is a [chapter](#) on sustainable drainage systems (SuDS), which outlines the city's sustainable drainage capacity, and how sustainable drainage systems can be implemented at various scales. This practical guidance demonstrates how London is integrating sustainable drainage systems as a major tool to work against flood risk.

Case Study: Derbyshire Street Pocket Park

Location: Bethnal Green, Tower Hamlets

About: Derbyshire Pocket Park is a converted, previously underused, street north of Weavers Field in Bethnal Green. The project was funded by the Mayor of London's Pocket Park Programme in 2013. The project focused on delivering a new cycle route and introducing a sustainable urban drainage system.

Implementation: The park is designed to lower flood risk through numerous strategies. The new cycle lane is constructed from permeable materials to allow water to drain. The new cycle storage includes green roofs. Rainwater planters, rain gardens, tree pits and a swale line the path. The storage capacity of each component was calculated to create an accurate catchment area. Materials were also reused and recycled on site, with the old road surface repurposed throughout the project.

Results: No water from the site enters the combined sewer system. Instead, it is all kept within the sustainable drainage system, lowering flood risk. Additionally, a new community space was created, and the biodiversity of the area increased with the new planting.

[Source: Sustainable Drainage Case Studies](#)



Social benefits

Urban green spaces can also bring social benefits including positive impacts on individual users and the community more widely. Green spaces can become focal points for communities and can encourage healthy social interactions and behaviours. For this reason, urban green spaces in large cities such as London are essential for encouraging social cohesion and improving physical and mental wellbeing. The social benefits are not separate from the environmental benefits: an improved environment encourages use of the space and improves wellbeing for those that do.

Wellbeing – Mental and Physical

Urban green spaces are linked to higher levels of health in several measures. Those living in areas with large amounts of green space have lower rates of cardiovascular disease, diabetes, and respiratory diseases²². Those who suffer from dementia and other degenerative diseases also experience better moods and wellbeing when they have access to green space. This is because the presence of nearby green spaces is associated with increased physical activity. There is a higher chance of physical activity uptake the larger the green space²³. Children's playgrounds and other facilities designed for children have also been found to encourage exercise and to reduce childhood obesity. The presence of separate and accessible cycle lanes can encourage cycling within the green space itself, but also more widely in the area²⁴.

Urban green space is also important for mental health and wellbeing. Regular use of green spaces leads to increased levels of happiness, improvements in mental health, and greater life satisfaction²⁵. They are found to reduce the severity of anxiety and mood disorders, and to reduce stress²⁶. The more an individual engages with the green space, the greater the wellbeing impacts will be. One study also found the quality of the green space is more important than quantity²⁷. For example, the presence of large amounts of diverse vegetation increases wellbeing benefits, and quieter green spaces also reduce stress levels. This evidence highlights the importance of green space design in maximising benefits.

²² [Residential Green Spaces and Mortality](#)

²³ [Rapid evidence review of the benefits of parks and green spaces for people and communities | Green Space Scotland](#)

²⁴ [Cycle Routes and Urban Green Space Policy | Camcycle](#)

²⁵ [The role of urban green space for human-wellbeing](#)

²⁶ [The associations among proximity to parks, the frequency of residents' visits to parks, and perceived stress](#)

²⁷ [Streetscape greenery and health](#)



Community Cohesion and Engagement

Urban green spaces can also encourage community cohesion, development, and engagement. A lack of urban green space is associated with increased feelings of loneliness, as community interaction is lower; green spaces provide a space for these interactions. Green spaces also help those new to the community integrate through opportunities to mingle, which is important for marginalised groups and those from different ethnic backgrounds²⁸. This effect increases with the presence of community groups and volunteering, which create deeper connections with the community. Green spaces can be designed with facilities to encourage social interaction, such as seating areas, play areas for children, and community gardening.

Case Study: Meanwhile Gardens

Location: North Kensington, Kensington and Chelsea

About: The site of the garden was derelict land that was previously industrial. The land was not in use, so community members appealed to the local council for permission to create the gardens. The lease for the land was never permanently granted, which created funding problems for the garden. In 1999, half of the site was given a 25-year lease, however the other half is still without a lease.

Current Operations: The site contains the Meanwhile Gardens Playhut, a community centre for young children, the MIND Wildlife Garden Project, a horticultural training project for adults with mental health difficulties, and the music centre for Metronomes, a local steel band. The park itself is not only ecologically diverse but open to the public and a key focal point for those in the community.

How the park is using community engagement: The Meanwhile Gardens Community Association is a voluntary group that oversees the site and continues to campaign for a permanent lease. The association is creating a plan for the site to secure funding. The association is also part of the wider Trellick Triangle Vision, a group of local community-oriented organizations that promote the interests of residents. The garden's sustained community and campaigning efforts in an area of need demonstrate how communities can come together to develop underused spaces for the wider benefit of the area.

Source: [Meanwhile Gardens Website](#)

Urban green spaces are important in encouraging children and young people to engage with nature. One way of increasing engagement is involving children and young people in the design process, so that the green space has the facilities

²⁸ [Space to thrive 2019, A rapid evidence review of the benefits of parks and green spaces for people and communities \(greenspacescotland.org.uk\)](#)



children want²⁹. Youth-focused activities, or programmes that connect young people with nature, can increase their connection and engagement with green spaces, which in turn increases how much they value nature³⁰. This will in turn encourage future green space use. Community consultation and involved decision-making promotes inclusivity and engagement, although the extent to which this influences use of green space is unknown. Studies recommend engagement with a wide range of community members, especially those who are not currently engaged with urban green spaces. In urban green spaces, there are often pressures from conflicting uses, therefore, widespread engagement with the community ensures these different needs and uses are considered.

How do we ensure the effectiveness of urban green space projects?

Urban green spaces are varied, with different benefits and drawbacks depending on the type, size, location, and intended audience. Any urban greening projects should carefully consider their context, so they address the social and environmental demands of the local area. This section of the report evaluates current policy and recommended guidance and standards in London and the UK.

Context: national, London-wide, and local policy

From a policy context, Lund should utilise the guidance given at the local level, such as the All London Green Grid areas and borough-level policies. This policy level gives more specific guidance on what is suitable for the social and environmental characteristics of an area. Greater London policy is less useful for area-specific guidance, however, Lund should use the principles and targets established by London-wide strategies as guiding principles. National policy is generic and therefore less important to consider.

Local Policy

There are eleven All London Green Grid areas which focus on the provision of urban green space. These Grids are cross-borough collaborations centered on the varied geographies of London (eg, along certain river valleys). The Green Grid areas contain a review of existing green spaces and projects in the local area, local policy frameworks, and potential and in-progress green infrastructure overseen by the local authorities.

²⁹ [Planning and design of child-friendly public spaces](#)

³⁰ [Local greenspaces important for children of all ages and backgrounds - GOV.UK \(www.gov.uk\)](#)



Some London boroughs have their own open space or biodiversity strategies. For example, Islington³¹ and Westminster³² both have Biodiversity Action Plans, Southwark has an Open Space Strategy³³ and Lambeth has a Green Infrastructure Strategy³⁴. These are important to consider as they will contain advice on environmental issues like biodiversity, existing green spaces and air pollution that are specific to the area, so can be used to target interventions. Smaller areas within boroughs, such as Business Improvement Districts, may also have their own greening strategies.

Greater London Policy

The 'Green Infrastructure and Natural Environment' chapter of the 2021 London Plan³⁵ includes policies on open space, urban greening, biodiversity, and access to nature (policies G4, G5, and G6 respectively). The urban greening policy incorporates the urban greening factor, which is outlined under the design standards section of this report. The Greater London Authority is integrating it as a requirement when constructing new buildings in London.

London's environment strategy³⁶ also contains a section on green infrastructure. Its three main policy objectives are: 1) make more than half of London's area green by 2050; 2) conserve and enhance wildlife and natural habitats; and 3) value London's natural capital as an economic asset and support greater investment in green infrastructure. The strategy compliments London's status as the world's first National Park City, and established the need for the London Green Spaces Commission.

The London Green Spaces Commission ran from April 2019 to August 2020, and produced a report reviewing current green space policy³⁷. The report put forward two key recommendations: the creation of a 'Centre of Excellence' for London's green spaces, which would be a cross-sector organization promoting innovation and best practice for green spaces; and establishing a 'Future Greenspace Skills Programme', to expand training in green space management.

Since 2016, the Mayor of London has also run schemes to fund urban green space. The two main funding schemes are the 'Grow Back Greener Fund' and the 'Green and Resilient Spaces Fund'. The first scheme has a total budget of £1.2 million. It offers grants of between £10,000 and £75,000, under the themes of increasing access to green space and improving climate adaption³⁸. The second scheme funds

³¹ [Islington Council Biodiversity Action Plan](#)

³² [Westminster Open Spaces and Biodiversity Strategy](#)

³³ [Southwark Open Space Strategy](#)

³⁴ [Lambeth Green Infrastructure Strategy](#)

³⁵ [The 2021 London Plan](#)

³⁶ [London Environment Strategy](#)

³⁷ [London Green Spaces Commission Report](#)

³⁸ [Grow Back Greener Grants Guide | London City Hall](#)



larger projects, with a budget of £4 million and grants between £250,000 and £750,000³⁹.

National Policy

The National Planning Policy Framework sets out the government's planning policies and how they should be used. It includes planning guidance that applies to urban greening projects⁴⁰.

The framework highlights the need for a 'network of high quality open spaces' that improve community wellbeing, deliver benefits for nature, and support efforts against climate breakdown. It states that any new greening projects should aim to create 'healthy, inclusive places' that provide 'social, recreational and cultural facilities'. Additionally, planning policies should sustain and contribute towards existing environmental standards, such as Clean Air Zones or Air Quality Management Areas.

The **Local Green Space Designation**, which protects green areas of local importance⁴¹. Spaces categorised under this designation cannot be developed on.

Existing guidance and Lund Trust

Lund should use the existing guidelines and resources listed below to identify the location and concentration of environmental problems in London. This can then facilitate interventions that would begin to address these problems. These resources are easy to use and understand, and therefore should be used by both Lund and partner organizations as part of the design for greening projects.

Resources include:

- **Green Infrastructure Focus** - A [map](#), produced by the Mayor of London, highlighting areas in need of green infrastructure, based on London's Air Quality Focus Areas, the Tree Canopy, current Public Open Space and London's Blue/Green Cover Indices. It aims to help practitioners identify where urban green space will be most effectively implemented.
- **Green Spaces Map** - A map of spaces open to the public throughout London can be found [here](#), broken down by type. The Mayor of London has also produced a [map](#) of green space projects funded by green grants since 2016. These can identify deficits in green space and show opportunities for connectivity.

³⁹ [Green and Resilient Spaces Fund | London City Hall](#)

⁴⁰ [Open space, sports and recreation facilities, public rights of way and local green space - NPPF](#)

⁴¹ [Open Spaces: Local Green Space Designation](#)



- **Air Pollution Levels** – A London-wide map of current air pollution levels can be found [here](#). A map indicating current pollution levels of existing green spaces can also be found [here](#).
- **Tree Canopy Cover** – A map of London’s current tree canopy cover can be found [here](#). Tree canopy is essential for urban cooling and uptake of pollutants and can act as a proxy for the general environmental quality of an area. A crowdsourced, UK-wide version of this map is available [here](#), which includes what percentage of each ward is covered by tree canopy.
- **Climate Risk Vulnerability Map** – A [map](#) displaying climate risk across London, which is broadly made up of **heat risk** and **flood risk**. The risk is calculated using exposure and vulnerability metrics, which are considered in unison to rank how at-risk an area is. As stated, urban green spaces cannot completely alleviate environmental problems and their climate risk, but we can use the map to identify vulnerable areas.
- **Biodiversity Management Strategy** – A detailed [guide](#) outlining strategies to increase biodiversity in urban green spaces, including evaluations of maintenance, cost, and site suitability for each measure. The Mayor of London also produced a design [guide](#) for implementing urban greening in the public realm for increasing biodiversity.

Socio-economic indicators:

- **Indices of Multiple Deprivation** – A [map](#) showing the distribution of Indices of Multiple Deprivation across England. Indices of Multiple Deprivation are a measure of relative deprivation, combining several indicators, such as average income, average employment rates and health deprivation. It is possible to filter by specific measures, including quality of environment.

These indicators help to spatially identify environmental and social problems using data. They are valuable for geographic targeting of interventions based on quantifiable need. However, they are underpinned by the assumption that urban green spaces can ‘fix’ environmental or socio-economic problems. Preventative policy interventions at a larger scale are more likely to address the core of these problems. Problems like air pollution and the urban heat island effect are city-wide and small, local interventions are unlikely to reduce these large-scale problems in a measurable way. Additionally, measuring outcomes can require specialist equipment, which might not be accessible to all organizations.

For these reasons, Lund should not require evidence-based outcomes for addressing environmental problems. Instead, Lund should take two approaches. First, there should be evidence that projects are using these resources to help design green spaces. Secondly, Lund may use proxy indicators to measure environmental benefits.



These may include:

- For heat risk, increasing the amount of shade through tree canopy cover can address heat risk;
- For flood risk, replacing impermeable surfaces with permeable ones (such as through street-based greening) can slow surface run-off; or
- For air pollution, creating green barriers using appropriate plants can help address air pollution.

While these proxies do not quantify the benefits, they can substitute for requiring evidence, which would involve more organizations and incur higher costs.

Access Standards and Minimum Quotas

Lund should fund projects that aim to increase accessibility by increasing proximity to green spaces in areas with a deficit. It is important that these projects are accessible to all users and minimise barriers to access to allow more users to experience the benefits. Greening projects that Lund funds should be as publicly accessible as possible, so should be based in the public realm.

Accessibility of green spaces has two components:

- Proximity to a green space – having a broad distribution of green spaces throughout the city, so green spaces can be easily reached; and
- Accessibility of green space – green spaces should be accessible to all.

Natural England has released guidelines on access to green space, known as the **Accessible Natural Greenspace Standards**⁴². It states everyone should live within a 5-minute walk of a green space (of at least 2 hectares in size), within two kilometres of a 20-hectare site, and should have one accessible 100-hectare site within 5 kilometres. Similarly, the green infrastructure chapter in the Mayor of London's 'London Plan' recommends open spaces of less than 2 hectares in size within 400m of all houses in London, and parks of 20 hectares within 1.2km of all houses. This is part of the Mayor of London's wider goal of London being 50% green by 2050⁴³. These standards are useful for encouraging provision of green space, however, high land prices and high capital costs in London may prevent this target being reached. There may be a trade-off between ensuring proximity to all and what sites are appropriate for green spaces, and the latter may be more important for logistical reasons.

⁴² [Natural England Accessible Natural Green Space Standards](#)

⁴³ [The 2021 London Plan](#)



Natural England recommends assessing existing and potential urban green space projects for accessibility⁴⁴. This framework evaluates spaces on a scale ranging from no access to full access. This is an important analysis point, as access to green spaces determines how benefits are distributed. Limits to opening hours, poor or no disability access, and membership fees influence how accessible a green space is. Poor maintenance, poor facilities, quality of green space and fear of crime also impact the perceived accessibility of a green space, as users will not feel comfortable using it. Therefore, urban greening projects should consider accessibility as a key criterion to ensure that benefits are equally distributed, and that the space will continue to be used in the future.

Design Standards and Guidance for Green Spaces

Two broad types of design standards for green space exist. The first takes a more technical approach to urban greening projects. For example, it may offer guidance for maximising the mitigation effects of urban greening strategies, or for quantifying green space to set benchmarks, and then use this to strategically increase mitigation effects. This type of guidance is most important where urban greening projects are being designed to tackle a specific environmental problem. Lund should use these resources as part of the selection criteria when reviewing potential projects.

The Mayor of London has issued design guides for maximising the mitigation effects of urban green space for both air pollution and flood risk. These offer coherent initial guidance, although will need to be considered in local contexts. Additionally, the Ecology Consultancy also produced an Urban Greening Factor guide for London⁴⁵, which outlines a methodology for quantifying green infrastructure by assigning scores to examples of integrated green infrastructure and using these scores to create an Urban Greening Factor. This can be used to determine current green infrastructure levels and establish new benchmarks. These guidelines are useful for establishing what constitutes transformative work, and encouraging greening, but give less guidance on what greening is most suitable to a particular context, and how it should be implemented.

The second type of design standard involves setting principles and standards to encourage high quality green space. Table 1 in the appendix compares design criteria on what makes a 'good' urban green space. This will vary with each type of greening project, its location, what its purpose is, and its intended audience. Lund should incorporate these criteria as guiding principles, but should note that they are deliberately open to interpretation in the context of each green space and not use them in a fixed, inflexible way. Projects should integrate the principles only where relevant.

⁴⁴ [Natural England Accessible Natural Green Space Standards](#)

⁴⁵ [Urban Greening for London Research Report](#)



Most of the guidance in Table 1 relates to how users will interact with the site, although there is some consideration of the environment. Incorporating these design points encourages consideration of how users will interact with the green spaces, and the integration into the wider community, which is essential for the long-term success of the green space. The guidelines are open to interpretation by designers and there is significant overlap between points suggested by different institutions, demonstrating their importance. For example, inter-connectedness of elements within the green space, and to the wider community, is important for encouraging use, as well as indicating the green space's function to all potential user groups. Since the Green Flag criteria is used to judge high quality green spaces after the design and implementation phase, the criteria also emphasises the importance of maintaining the quality of the park, and having an accountable management team. The various criteria give little guidance on how they would be implemented in practice and are not data-driven, which allows for interpretation based on what is most appropriate for the space. In practice, a group creating an urban green space should refer to them where relevant as guides for the design process and sustained management of the space. They should be critical of how applicable different design points are to their project, and so should prioritise based on the pre-existing and intended characteristics of the space.

What are some of the challenges with project implementation, and how can these be addressed?

Given Lund will be funding green space programmes through regranting, the organizations responsible for carrying out the programme will be just as important as the design of the green space. To ensure it is successful, Lund should be aware of the challenges of project implementation, and what measures Lund can take to ensure successful implementation. A summary of challenges can be found below.





To mitigate these risks, Lund should establish key criteria and requirements for eligible projects. This, combined with due diligence on potential grantees and their projects, would help ensure the success and longevity of a greening project.

Recommendation One: Applicants should either own the land or have permission to work on the land as a pre-requisite to application.

To implement an urban green space project, applicants will likely need permission if they do not own the land. I recommend that the groups proposing the project either own the land or already have permission from the landowners to develop the site. This is particularly relevant for street greening or tree-planting, where permissions will need to be obtained from the local authority for any intervention. Each London borough has a designated contact for tree planting (a list can be found [here](#)), who can advise on permissions and feasibility. Projects applying to Lund should have permission for implementation as a requirement of the application.

Recommendation Two: Review the capacity of organizations to support the implementation of urban green spaces and encourage partnerships where organizations may need support in delivery.

Lund's regranteeing strategy will require working with at least one external organization for the implementation of the programme. The organization(s) will need to undergo due diligence to ensure they have the capacity to successfully run the programme.

During the application stage, there needs to be an accountable organization (such as a community group, resident's association, or business improvement district) that co-ordinates each project. Without this, the implementation may be uncoordinated and fail to meet its aims. The table below has a summary of types of organizations, and their strengths and weaknesses for involvement in urban green space projects.

This table gives a broad overview of various capacities of organizations to support implementing urban green spaces. These are generalisations, with individual organizations varying within their category. It should not replace the due diligence Lund should carry out, but begins to suggest the strengths and weaknesses some organizations may have.



URBAN GREEN SPACE REPORT

Type of Organization	Strength of governance and continuity	Connections to the local community	Environmental knowledge	Maintenance capacity	Scale of projects
Green Space Charities and Organizations	Strong governance and continuity, and will have evidence of previous project implementation	If London-wide, local knowledge of the community may be limited	Strong environmental knowledge	May have good capacity for maintenance, depending on size and funding	Varies depending on size of organization, but can likely support various types of project at different scales
Community Interest Groups	Comparatively weaker governance, which can impact the longevity of the organization	Strong connection to the local community	Variable environmental knowledge, depending on the specific group	Limited capacity for maintenance, unless a local gardening group	Can support localised interventions on a community-level
Tenants and Resident's Associations	Comparatively weaker governance, which can impact the longevity of the organization	Strong connections to the community served by the association	Limited environmental knowledge	Limited capacity for maintenance – may be managed by the estate or the association	Smaller scale of projects, located within the remit of the organization
Schools	Strong pre-existing governance structure	Strong connections to the local community	Little environmental knowledge,	Reasonable maintenance capacity if incorporated into school maintenance generally	Limited scale of possible projects - geographically and in scope
Social and Not-For-Profit Businesses (eg, Business Improvement Districts)	Strong pre-existing governance structures	Depends on scale of organization, can have good connections to local community	Dependent on business focus	Can have high capacity for maintenance	Typically, can implement projects on a wider scale and scope
Local authorities	Strong governance processes; continuity impacted by political changes	Good local connections, although on a small scale it may be more limited compared to smaller, local groups	Good environmental knowledge, often with specific environment divisions	Good capacity for maintenance if integrated into the remit of the local authority	Has the capacity for larger geographic scope of projects



As the table demonstrates, different organizations have different capacities that will influence their ability to implement urban green spaces. No organizations should be excluded, so as to increase accessibility of the funding programme.

Lund should also carry out due diligence on the involved organizations. The type of evidence required should depend on the type and size of the organization. For example, a constitution, management committee and evidence of regular meetings or activities may be sufficient for smaller voluntary organizations, whereas for larger organizations, we might look for evidence of previous project management and information about how they monitor their projects.

Some projects will likely be a collaboration between various groups, which can create logistical challenges. Firstly, if planning permission will be required, Lund will need to see evidence of approval and co-operation between the applicant and the planning authorities. Secondly, if projects are collaborative, there should be a lead organization that coordinates clear communication and cooperation. Projects involving multiple organizations will likely have higher costs, although may generate greater benefits. For example, a community group with little experience with urban greening may benefit from a partnership with an urban green space charity or social enterprise, who can provide knowledge and capacity

Lund should review on a case-by-case basis whether collaboration will generate the best output. While it will likely increase costs, it may lead to better social and environmental outputs if organizations share knowledge. It may also increase accessibility to the programme, as small groups, who would not have the capacity to apply or implement projects alone, can use partners to bolster institutional capacities. This will impact the number of projects Lund can fund within the £250,000 budget, but will maximise the value of projects that are funded.

Recommendation Three: Lund should require a clear management and maintenance plan as part of the application process to ensure longevity and success of the project.

The legacy of an urban greening project is crucial to its success and to ensuring the value of the funding. If an urban green space is poorly maintained or falls into disuse, the anticipated benefits will not occur. London's spending on urban green space has decreased by 30% in the past ten years⁴⁶, mostly due to cuts to local authorities who maintain the spaces. This creates the risk of poorly maintained, and therefore underused, green spaces.

Any projects Lund funds should include a clear strategy for the future. This should be a requirement in the application process, and should be adapted to the project specifically, eg, maintaining any plants and/or maintaining any amenities like benches. Lund can use one or a combination of the below strategies.

⁴⁶ [London Green Spaces Commission Report](#)

Emily Douglas

1 September 2021



- Support projects with minimal upkeep;
- Allow a certain percentage of each grant to be put aside for maintenance costs (eg, 10%); or
- Fund projects run by organizations with capacity to maintain green spaces.

How should Lund Trust approach funding urban greening projects in London?

Using the above research, the final section of this report makes recommendations specifically for Lund's future urban greening programme. This includes suggestions for the brief, recommendations for how to assess the design of projects, and how Lund can oversee the implementation of these projects.

- 1. Increase the size of each grant from a £10,000 maximum to between £25,000 and £50,000.** This is recommended for two reasons. The first is that London will likely have higher costs than projects funded under Sussex Lund, for example, higher labour costs, or the cost of removing small sections of existing infrastructure for greening. Secondly, this increased budget can help increase the scale of these projects, extending their benefits. If collaborative projects are beneficial, the budget for individual grants may increase, although this should be evaluated on a case-by-case basis.
- 2. Focus on grey to green and brown to green strategies to create the most transformative work.** The brief sets out that work should be transformational. The most feasible way to achieve this is transforming previously grey spaces into green. Within the context of the budget, this will likely be street-based greening. Lund may also want to accept applications that fund 'brown' spaces (old industrial sites) into green. This can also generate transformational work, and can rejuvenate an area, however, may incur higher costs and involve more organizations working collaboratively. If these sites are to be funded, Lund should see evidence of permissions, and consider any challenges specific to the site (eg, safety if located on a nearby railway line).
- 3. To give projects a clear direction, they should be designed to target one of five environmental challenges outlined in section one: flood risk, heat risk, air pollution, depleted biodiversity, or a green space deficit.** This will give a clear purpose to the project and can encourage



applicants to focus their limited resources on addressing one environmental challenge. This should not limit the green space to just one function but should instead encourage an understanding of the environmental challenges in the area, and how green space can be implemented in this location to address a challenge to justify its presence. Lund can use this demonstrated need (and how the green space aims to tackle it) as part of the assessment criteria when deciding which projects should be funded.

- 4. Require applicants to design a project that is appropriate for the social and environmental characteristics of a local area by using pre-existing data on London.** A starting point is using the resources collated in this report, which include design guidance and maps for ensuring the most appropriate interventions in the area. The applicants should also be encouraged to be in contact with local authorities and local community groups to further ensure the project is suitable for the local area.
- 5. Instead of using data for evidence-based outcomes, use proxy indicators for improvements in the environment.** Academic studies have pointed to the difficulty in measuring the environmental benefits from one green space. Instead, Lund can judge projects based on proxies, some of which were outlined in Section 2. These are more feasible for the scale of the projects, and for the potential organizations implementing them, which may have limited capacity for environmental monitoring.
- 6. Fund projects that will be as publicly accessible as possible to ensure wider benefits.** Lund should encourage applications for projects located in the public realm, meaning that they have wider public access, and can be accessed without restriction (eg, opening and closing times or membership requirements to access). This will increase the distribution of the social benefits.
- 7. Fund sites that integrate wider networks of green space and encourage connectivity between green spaces.** Creating networks of green spaces has both social and environmental benefits. Projects that connect to wider networks of green space should be encouraged. For example, green corridors along streets between green spaces can encourage people to explore wider networks of green space, but also encourage wildlife to move between green spaces.
- 8. Work with organizations that have strong connections with the local**



community. Working with the local community is essential for ensuring a successful greening programme, as involvement and backing will encourage use of the green space and ensure it addresses the needs of the community. Local organizations, such as residents' associations, schools and community interest groups are good partners for connections to the local community. However, these groups may benefit from additional partners that can help with environmental knowledge, implementation, and maintenance. Lund should encourage these partnerships.

- 9. Require a maintenance plan.** The maintenance and longevity of a project is crucial for the success of a green space. Lund should require a plan for how the project will be maintained, whether it will be mostly self-sufficient, whether an organization has the capacity to organize its own maintenance, or whether a small percentage of funding from Lund can be dedicated to maintenance.

These recommendations provide the initial guidance for implementing a new programme in London. The recommendations are not comprehensive and may need to be adjusted contextually as the programme progresses. Nonetheless, they hope to encourage and guide a programme that creates successful, effective, and resilient green spaces.

Recommendations for Further Research

For the next stage of implementing the funding programme, I recommend further research into:

1. Research into local groups that could act as partner organizations. Table 2 in the appendix gives preliminary suggestions based on my research, although this table is by no means comprehensive. Where possible, organizations focused in smaller areas may be beneficial.
2. Conduct further research into how urban green spaces can be maintained, in terms of both short-term and long-term practices and interventions to ensure the success of projects. Case studies may be useful for this.



Appendix

Table 1:

Design Council (Councillor’s Guide, focus on public space)	Green Flag Award Parks	Essex Design Guide	Design Council ‘Start with the Park’ Design Watch Points
<ul style="list-style-type: none"> • Character • Continuity and exposure • Quality of the public realm • Ease of movement • Legibility • Adaptability • Diversity 	<p>Criteria is grouped under eight main categories:</p> <ul style="list-style-type: none"> • A welcoming environment • Healthy, safe, and secure places • Well maintained and clean • Environmental management • Biodiversity, landscape, and heritage • Community involvement • Marketing and communication • Management 	<ul style="list-style-type: none"> • Part of a wider network, connected internally and to its surroundings. • Well-maintained and appropriately managed, • Accessible to all. • High biodiversity value; • Of varied character and functionality to meet identified needs. • Secure and safe • Sufficiently well-designed and well-equipped as to become a destination • Well-connected to walking and cycle routes. • provisioned with seating and resting spots; • legible to all users, with clear wayfinding; • provisioned with shelter and shade. 	<ul style="list-style-type: none"> • Be clear about function • Reflect and enhance local identity • Integrate green spaces with building design • Consider context in the public realm • Provide for choice • Build for longevity and flexibility • Consider all user groups • Provide a range of habitats

Sources: [Design Council Guide](#), [Green Flag Park Awards](#), [Essex Design Guide](#), [Design Council Start with the Park](#)



Table 2:

Name of Organization	Short Summary
Urban Growth	London-wide urban greening charity
Groundwork	Nationwide urban greening charity
Semble	Social enterprise supporting community-led projects (including urban greening)
Street Space	Social enterprise for community improvement (including urban greening)
GrowN22	Haringey-based green spaces charity
Bankside Open Spaces Trust	Southwark-based green spaces charity
The Conservation Volunteers	Nationwide volunteering organization focused on green space conservation
London Wildlife Trust	London-based nature conservation charity