The importance of considering ‘setting’ in a heritage context

Published 12 December 2019

The National Planning Policy Framework (“NPPF”) provides guidance on when a planning proposal might cause harm to the significance of a heritage asset. The NPPF and recent case law has reinforced that the significance of any harm derives not only from the heritage asset but also from its setting.

Why is setting important?

‘Setting’ is broadly defined in NPPF’s glossary as:

The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.

The importance of considering the surroundings of an application site and not only the site itself was recently highlighted in the case of James Hall v Bradford MDC [2019] EWHC 2899 (Admin) dated 1 November 2019 where the court quashed a planning permission on the basis that the Council had failed to consider the impact of development on the setting of a heritage asset. In this case the Council had granted consent to demolish an old fire station and construct a food retail unit with parking. The site was adjacent to, but not within a conservation area. The court found that the development would affect the setting of a heritage asset. NPPF paragraph 189 requires planning authorities to describe the significance of affected heritage assets and consult the relevant Historic Environment Record if the harm is less than substantial. Where the harm is less than substantial, the public benefits of the proposal are weighed against the potential harm (see paragraphs 13-14 of the judgment).

What constitutes harm?

When assessing what constitutes ‘harm’ to a heritage asset the NPPF (paragraphs 193 – 202) categorises harm into three areas: substantial harm; less than substantial harm; and no harm.
Substantial harm is any impact which could cause harm to or loss of the significance of a heritage asset. This is typically attributed to listed buildings, those of historic importance, registered parks and gardens, and World Heritage Sites. This harm could result from its alteration or destruction, or from development within its setting. When it is considered that there will be less than substantial harm the public benefits of the proposal including, where appropriate, securing its optimum viable use will be considered.

What you need to know

At the early stages of a planning application it is advisable to consider the surrounding area and any heritage assets of significance. If there are heritage assets of significance, you should inform the design of the proposed development with reference to those assets and aim to minimise or avoid any potential harm. The Government’s Planning Practice Guidance on the Historic Environment recommends that developers conduct early appraisals which may inform a conservation plan or targeted specialist investigation to identify constraints and opportunities arising from the heritage asset.
The planning team at DAC Beachcroft have a strong track record handling heritage issues. If you have a planning proposal which may impact on the significance of a heritage asset and would like some advice on issues which may arise please let us know.

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Agenda

Camden

CULTURE AND ENVIRONMENT SCRUTINY COMMITTEE

MONDAY, 16 NOVEMBER 2020 AT 7.30 PM
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L = Labour, C = Conservative

Issued on: Friday, 6 November 2020

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MAXIMISING THE BENEFITS OF TREES IN CAMDEN: ACTIONS

Aim	Objective	Measure
Maximise benefits of trees	Use pollution maps to help prioritise new tree surveys in the priority wards.	Canopy cover survey carried out every 5 years by ward.
	Prioritise species known to improve air quality in areas with high pollution, while still trying to increase the species diversity	Measure species distribution
	Indicate in species list if species is known to improve air quality (see species diversity above)	
	Select planting sites and species to help avoid pollutants being trapped at street level.	
	Select planting sites and species to reduce the risk of damage to infrastructure and property.	

Increasing recording of tree planting

The council is not the only organisation carrying out tree planting in the borough. The Royal Parks, conservation groups, the City of London, private developments, community groups and homeowners (see: Increasing planting on private land and Involving the community) all contribute to planting trees in the borough, but their contribution is not fully recorded.

To address this the council aims to collect tree planting data annually from the Royal Parks, conservation groups, City of London and community groups such as Camden Forest. This will help us measure tree planting in the borough. These numbers will be published, with Camden's own, through the council's opendata website[18].

Private development is more difficult as there is no requirement to report back on tree planting numbers when landscaping works are complete. However, the council will work with colleagues in the planning department to explore ways to check tree planting numbers.

[18] https://opendata.camden.gov.uk/stories/s/Camden-Tree-Statistics/ad58-u6q7/

Measuring canopy cover is the best way of monitoring how successful tree planting and tree maintenance have been and will include trees not owned by the council. Repeating surveys every five years will show whether canopy cover is increasing or decreasing. The council will aim to repeat canopy cover surveys every five years.

INCREASING RECORDING OF TREE PLANTING IN CAMDEN: ACTIONS

Aim	Objective	Measure
Better recording system of trees planted per year including planting done in the borough not by the tree section.	Include recording for trees planted by conservation groups	Publish yearly planting information on the website
	Include recording for trees planted by project officers, when not planted by Tree team	
	Include recording for trees planted by Royal Parks, TFL, City of London and community groups in Camden	
	Explore opportunities to record trees planted by internal and external developments	

Better tree planting and aftercare

Tree planting by the Council is carried out in line with industry best practice. All trees planted by the Council are monitored to check they have been planted to the council's specification. Any that do not meet the specification are replanted by the contractor at no extra cost to the Council.

The size of trees the council prefers to plant are heavy or extra heavy standards, which are approximately 3.5 to 4 metres tall, because they have smaller root systems and are easier to accommodate into the pavement. They require less

water than a larger tree would and become independent in the landscape quicker.

All trees receive three years of aftercare that consist of watering and young tree maintenance; after this time they should be independent in the landscape.

The public can help the council to nurture these trees in the first three years of planting. To aid residents helping to water the trees in times of drought watering-bags are installed on all new trees. Trees without bags are established and should not need any additional water. A short animation on how to use the watering bags can be found on the council's the website: **[insert link].**

To help the trees, residents should refrain from planting flowers in tree pits for the first three years after planting. Planting flowers before this increases the competition the tree faces for water and nutrients it needs to gain independence. Information on planting flowers in tree pits can be found on the website[19].

To help reduce the amount of single use plastic in tree planting the council has identified two changes in Camden's tree planting practice. The first is the plastic irrigation tube, which the council has removed in favour of the reusable watering bags. The second is using hessian ties instead of rubber ones, which will naturally decompose overtime.

TREE PLANTING AND AFTERCARE IN CAMDEN: ACTIONS

Aim	Objective	Measure
Improve tree planting process, and aftercare.	Monitor 100% of the trees planted by the council's contractors	Monitored by Camden Tree Officers
	All trees to receive three years' aftercare	Calculate annual survival rate for this period.
	Introduce biodegradable hessian ties to remove plastic and rubber ties	
	Introduce watering bag for all trees planted that remain on the tree for three years before being collected and reused.	
	Encourage residents to help water new trees	
	In parks liaise with static gardeners in parks to water the trees	
	Guidance provided on	

[19] www.camden.gov.uk/trees

	planting flowers in tree pits.	

Biosecurity

Climate change, international travel and trade have increased the frequency of new pests and diseases entering the UK. The current tree population may not be resilient to these new pests and diseases as they would not normally meet under natural circumstances. This can have devastating consequences on tree numbers and canopy cover, which will reduce the benefits the council relies on trees to provide for residents.

For example, Camden is over reliant on London plane for the benefits it provides. Ceratocystis platani (canker stain) is a disease that was introduced from the USA to Italy on ammunition cases during the Second World War. This disease is easily transmitted from tree to tree via root-to-root connections or wounds and results in tree death. If this disease arrives in the UK and Camden the council would see a significant portion of Camden's tree population disappear, as trees can die within 3-7 years[20].

To help protect the tree population of Camden the council has produced a pest and disease management plan (see appendix C), a new document which looks at current practices and sets out short, medium and long term recommendations. Prevention is better than cure and appropriate species selection, purchase, planting and aftercare, and awareness are the best ways to protect Camden's trees.

BIOSECURITY IN CAMDEN: ACTIONS

Aim	Objective	Measure
Minimise the potential of new pest and diseases entering the borough	Source trees from UK based nurseries. Select species that are grown in UK or imported species that have followed the most recent biosecurity procedure.	Check with nurseries the source of their tree stock and biosecurity policies.
	Continual professional development of Tree Officers to recognise current and potential pests and diseases.	
	Sharing information with other public land managers on new pests	

[20] https://www.forestresearch.gov.uk/tools-and-resources/pest-and-disease-resources/plane-tree-wilt-canker-stain-plane-ceratocystis-platani/

	and diseases found in the borough.	

Increasing planting on private land

Tree planting on private land, through the planning process or in people's back gardens, is necessary to increase canopy cover in Camden. To help developers and resident make the correct decisions on planting trees the council shall provide information on Camden's urban forest through the website.

The council will work with representative community groups, such as the Camden Forest 2025 and the Think & Do, to encourage private home owners to plant trees in their garden.

INCREASING PLANTING ON PRIVATE LAND IN CAMDEN: ACTIONS

Aim	Objective	Measure
Promote tree planting on private land	Share information on Camden's urban forest through the council the website and provide guidance on species selection.	Canopy cover survey carried out every five years by ward.
	Work with Camden Forest 2025 to promote tree planting in people's back gardens.	Request data on number of trees planted annually.

Involving the community

Connectedness to nature is becoming recognised as being as important, if not more so, as just making space for it[21]. Research has shown that people who connect with nature are more likely to exhibit pro-conservation behaviour[22]. One way of fostering a connection with nature is through planting and caring for a tree.

The amount of public land available for communities to plant on is small. However, there are currently opportunities for tree planting in the borough via the Green Gym[23].

[21] https://www.rspb.org.uk/our-work/conservation/projects/connection-to-nature/
[22] https://nt.global.ssl.fastly.net/documents/noticing-nature-report-feb-2020.pdf
[23] https://www.tcv.org.uk/london/green-gym-london/camden-green-gym

The Council is happy to consider any tree planting proposal for public land presented to them, but residents and businesses are also encouraged to look at planting in their own back gardens or land.

INVOLVING THE COMMUNITY IN CAMDEN: ACTIONS

Aim	Objective	Measure
Community involvement	The Camden Green Gym, including tree planting in the borough for residents who wish to volunteer.	See measure for aims in section 10.

Appendices

Appendix A

The Planting Process

Once a request for a new tree is received, if submitted by August and funds are available, it is added to the planting survey for the current planting season. If the council is unable to include the location that year it will be added to the following years programme.

The survey usually takes place during the summer so that excavation are completed by end of September. If the new location is in soft landscape the following procedure might not be necessary and the location will be added to the planting list, pending agreement with existing Friends Group or Resident Association.

In order to plant new trees on the pavement, an initial survey is carried out to determine where and if the location is suitable for new trees. The visual survey takes in consideration street furniture, road and pedestrian crossing, proximity to properties and existing vegetation.

The survey will then use detecting equipment to identify underground utility cables and determine if the space is free to plant a tree. The successful locations are then marked and passed to the second phase of the survey which is the trial excavation.

The identified locations are then trial excavated to determine if the pits are free of services or other obstruction. The detecting equipment is not 100% accurate, some cables might not be identified at the initial process, cellar or other existent obstruction are as well not detectable initially. The council requires at least a tree pit of 600x600mm and 600mm in depth free of services in order to plant a tree.

The locations that pass the excavation are then planted as part of the planting programme for that year.

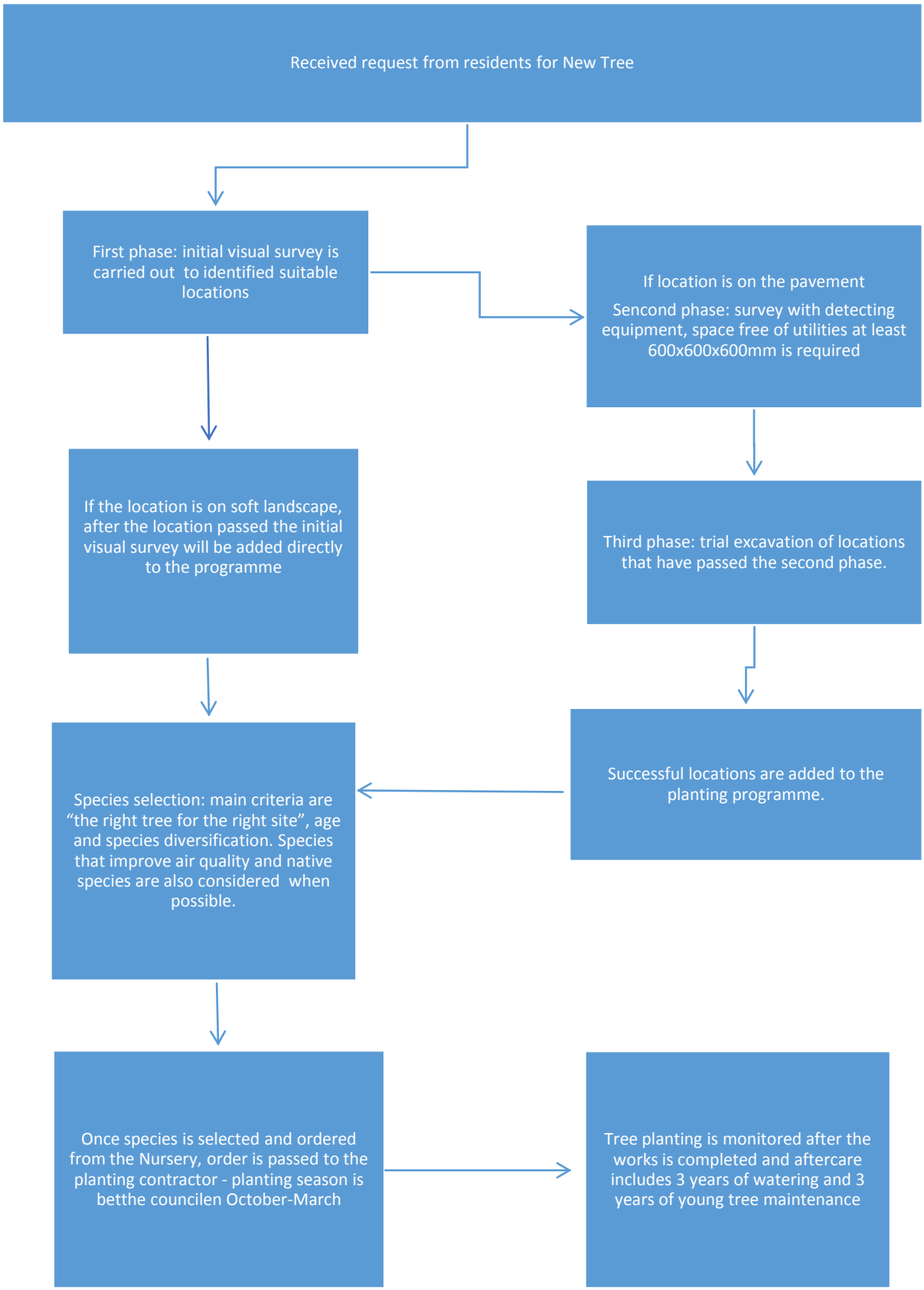
Once the availability of the location is confirmed selection of a suitable species for the site based on “the right tree for the right site” principle, and criteria set out in Councils Tree Policy and Tree Planting Strategy.

The species is selected and the order to plant the trees is passed to the tree contractor that will schedule the planting within the planting programme that usually runs from October to March. The tree will be planted and secured to wooden stakes with hessian ties. A watering bag will also be installed as well.

After the planting all the trees are monitored by the tree team to determine the standard of planting and the condition of the trees. The trees are then passed to the aftercare programme which includes 3 years of watering and 3 years of young tree maintenance

The watering programme consists of a minimum of 12 visits from end of April to end of September, the exact period and the frequency may change to tailor it to the weather conditions.

The young tree maintenance, consist of controlling the condition of the stakes and support, aerating the soil, and removing any failed tree.


Received request from residents for New Tree
First phase: initial visual survey is carried out to identified suitable locations
If location is on the pavement
Sencond phase: survey with detecting equipment, space free of utilities at least 600x600x600mm is required
If the location is on soft landscape, after the location passed the initial visual survey will be added directly to the programme
Third phase: trial excavation of locations that have passed the second phase.
Successful locations are added to the planting programme.
Species selection: main criteria are “the right tree for the right site”, age and species diversification. Species that improve air quality and native species are also considered when possible.
Once species is selected and ordered from the Nursery, order is passed to the planting contractor - planting season is betthe councilen October-March
Tree planting is monitored after the works is completed and aftercare includes 3 years of watering and 3 years of young tree maintenance

Appendix B

Camden tree diversity

Metric	Camden's Current Population	Moving Forward
Species Diversity	Camden's public tree inventory currently **exceeds the 10% species representation** benchmark (As cited and discussed in detail later within this report) It is important to note that Plane Trees (*Platanus spp.*) represent 13% of the population, and are the only species to exceed the limit. With Lime (*Tilia x europaea*) representing just 7%.	Camden's current public tree inventory has a good diversity of species. Future tree planting should be targeted to further diversify its population, and reduce the proportions of a few key species. Camden's target should be, when new species are planted, that no individual species **represents more than 10% of the population.**
Origin of Species Diversity	Currently Camden has a good diversity in terms of species origins. As can be expected most species are native to Europe.	With the ever-present threat from climate change it will become more important to diversify the population through careful species selection. Camden should aim to plant trees from continents with lower representation.
Size and Age Diversity	The size class distribution of trees within Camden is well balanced in the lower size classes.	The tree population would benefit from a greater diversity of large stature trees as this size class (Trees over 60cm DBH) is dominated by Plane Trees (*Platanus spp.*).
Distribution Diversity	It would be advised that distribution diversity is assessed through evaluation of canopy cover maps and datasets.	Ward-by-ward analysis specifically focussing on the diversity of the distribution would enable Camden to prioritise tree planting to areas where distribution is low. Where possible, evenness of canopy cover could be a key target. Camden's Tree Plant Strategy will provide strategic planting hotspots which do account for distribution of canopy cover.
Dominance Diversity	When compared with other local boroughs within London, it can be seen that the diversity of dominance holds many similarities in terms of the curve.	With Camden's most dominant species (*Platanus spp.*) representing 40% of the total leaf area, it is essential that this is taken into account for future tree planting given the proportion.

Appendix C

Pest and disease management

Background
Managing tree pests and diseases in cities is expected to become increasingly important as the climate changes and new pests and diseases are introduced by human activity. Trees in the urban environment are already in an environment where the face restricted growing environments, human inflicted damage and lower water availability. These factors mean that urban trees are more likely to be susceptible to damage from pests and diseases. Looking to the future, Camden has the opportunity to begin to adapt to these new realities by monitoring tree pests and diseases in the borough and adapting tree planting to ensure a healthy tree canopy in years to come.

Approaches to pest and disease management
There are three approaches to Pest & Disease (P&D) management:

Resistance: Continue to replace like for like, use species and cultivars already known to tolerate the local climate and expected pest and disease issues. - Camden has already moved away from this approach.

Resilience: Plant natives and species adapted to local climatic conditions along with trees expected to be resistant to emerging P&D outbreaks. This spreads risk and maintains historically important trees.

Transition: Actively plant new species in order to mitigate the impacts of tree P&D. A higher risk strategy given the unknown future climate and P&D outbreaks.

Is Camden adapting its approach?
Camden has moved away from a resistance approach and is concentrating on resilience. Historically large volumes of London Plane trees were planted across the borough. Camden now use a wider variety of species when replanting trees which have been removed or planting new areas. In planting a wider species selection, Camden is reducing the potential impacts that a new pest or disease could have on the borough's tree stock. Utilising a greater range of tree species has additional benefits in terms of improving the boroughs biodiversity and adding extra amenity value to areas.

What should the council be looking out for?
The observatree project has identified 20 pests and diseases which pose the greatest threat to tree stocks https://www.observatree.org.uk/tree-health/pests-and-diseases/ . Additionally, the LTOA provide guidance on P&D deemed most likely to impact trees within London. These are classified as P&D which:

- have already arrived in the UK and further spread is of concern
- most likely to arrive in the UK in the future
- Those which have the potential to cause the most serious and widespread impact on commercial forestry, amenity woodland and ecological systems

Known Issues within the Borough
Below are links to the main pest and diseases present within the borough of Camden

- Horse Chestnut Leaf Miner
- Ash Dieback
- Oak Processionary Moth (OPM)
- Massaria Disease of Plane Trees

What is the council doing about these known issues?
Camden is taking a proactive approach to mitigate the impacts these established pests and diseases have on its tree stock. Camden follows the best practice of the LTOA, Arboriculture Association and Forestry Commission. This guidance informs the management and control of these pests and diseases. Oak trees are checked annually for OPM, with specialist technicians removing and destroying any outbreaks detected as this is a notifiable pest. The council's Plane trees are also regularly inspected for Massaria disease, with any deadwood or signs of the disease being pruned to reduce the incidences of branches dropping. Issues such as Horse Chestnut Leaf Miner have a visual impact to trees in the borough and are likely to reduce tree vigour overtime. This highlights the need to remain vigilant in preventing new pests and diseases to enter and establish in the borough.

Biosecurity
Increasingly invasive alien species are posing greater threats to Camden's tree stock. Diseases such as Ash dieback have the potential to cause large tree population losses, having lasting amenity and ecological impacts. With a changing climate, diseases such as Massaria of Plane have emerged as new diseases, requiring a proactive approach to the management of trees and with significant additional costs. It is likely scenarios such as this will increase in the coming years. There are several known tree pests and diseases not currently in the UK that have the potential to have a significant impact on Camden's tree stock and it is important the council keeps informed on these potential threats in order to prevent them establishing within Camden

Emerging Pests and diseases

As well as pests already in the UK, there are several pests and diseases which have the potential to cause significant damage if they enter the UK. The Camden tree team follow the best practice in sourcing new trees and monitoring the tree population to ensure that these new threats aren't allowed to establish within Camden. Many of these pests and diseases not yet in the UK have the potential to cause significant damage to the tree stocks in the urban environment. Some of the most significant threats are shown below:

- **Asian/citrus longhorn beetles-** Feeds on a wide variety of trees and shrubs. Severe infestations can kill mature trees or leave them susceptible to

secondary fungal infections. Asian Longhorn beetle has been found in isolated outbreaks in the UK and has been successfully eradicated

- **Emerald ash borer-** Feeds on the inner bark of Ash trees, leading to their death. The insect is spreading westwards from Russia into Europe and is present in North America. No outbreaks have yet been discovered in the UK
- **Canker stain of plane -** a pathogen which causes sudden wilting and bleeding lesions in Plane trees. Thought to have been accidentally introduced to Europe in WW2 from North America, this would have a serious impact on the London plane Landscape of Camden.
- **Xylella fastidiosa-** A bacteria which causes leaf scorch, wilt, dieback and plant death and can infect some 560 known plants, trees and shrubs. Xylella is present in southern Europe where it has become a serious issue in olive groves

Biosecurity threats

Threats to council owned trees are beyond the control of the tree department. However, being aware of the issues and following industry guidelines helps to raise awareness of biosecurity threats. The two greatest threats to biosecurity in Camden are as follows:

London's location: London is a city with global connections, and experiences high levels of movement of people and goods. It is therefore highly likely that future P&D outbreaks will emerge within the city. This could mean P&D could establish on trees already under stress caused by the built environment

Private trees: Private trees have the potential to be sources of infection/outbreak in the borough. Many trees may not be proactively managed, and landowners may not be aware of tree P&D issues. A likely scenario could see private trees acting as an ongoing source of infection to council managed trees. Additionally, private landowners may introduce new pests and diseases accidentally by using infected planting material from growers with poor biosecurity measures.

Climate change

Camden has set the target for net zero carbon emissions across the borough by 2030[24]. Trees are considered as having a crucial part to play in helping to offset emission and sequester carbon from the atmosphere. Additionally, trees have the potential to emit some of the impacts of climate change by helping to cool the urban environment, reducing the need for air conditioning during hot summer months. It is therefore important that Camden maximises canopy cover where possible within the borough. As the climate changes, trees in the borough are likely to come under increased stress through periods of drought and higher average temperatures. Camden are already working to increase the diversity of trees within the borough, making the future urban forest more resilient to climate change. Tree planting choices will likely change over the coming years as species suited to a hotter, drier climate will be better suited to the urban environment.

[24] See Camden Climate Action Plan for more details https://www.camden.gov.uk/climate-crisis

Camden tree pest and disease Management

The LTOA recommends implementing moving from a reactive, to a proactive approach in managing tree pest and disease. This approach involves predicting future P&D outbreaks which are likely to impact the boroughs tree stock, identifying high biosecurity risk, and prioritising the protection of trees where appropriate.

Much of the work that Camden already undertakes is proactive. Trees are actively managed, inspected and new plantings take place using a mix of species from reliable suppliers. This is helping to reduce the risk of P&D on having detrimental impacts to Camden's tree stock. In the future, new P&D outbreaks will likely emerge, and climate change will have unpredictable implications leading to additional stresses on trees. It is therefore important that the council begin to anticipate these impacts now so the council are better informed should they become present within the borough.

What else can be done in the Borough?

Short term: The observatree project has produced good literature and posters which the council could place in notice boards in parks. This would help increase public knowledge of the issues to keep an eye out for within the borough and on their own, private trees https://www.observatree.org.uk/. Additionally, tree officers should continue to build their skills and knowledge in relation to tree pests and diseases through ongoing professional development.

Medium term: Continue investigating the likely tree P&D pathogens which are most likely to impact the borough. Look at examples from other cities in their approach to integrated P&D management to inform practices at Camden. Work with greenspaces team to see how tree P&D management fits in with the wider plan for the borough. Record P&D impacted trees into a database: this can be used to see which P&D are most prevalent and the cost of the tree management to be estimated. Look at ways to promote biosecurity across the Council.

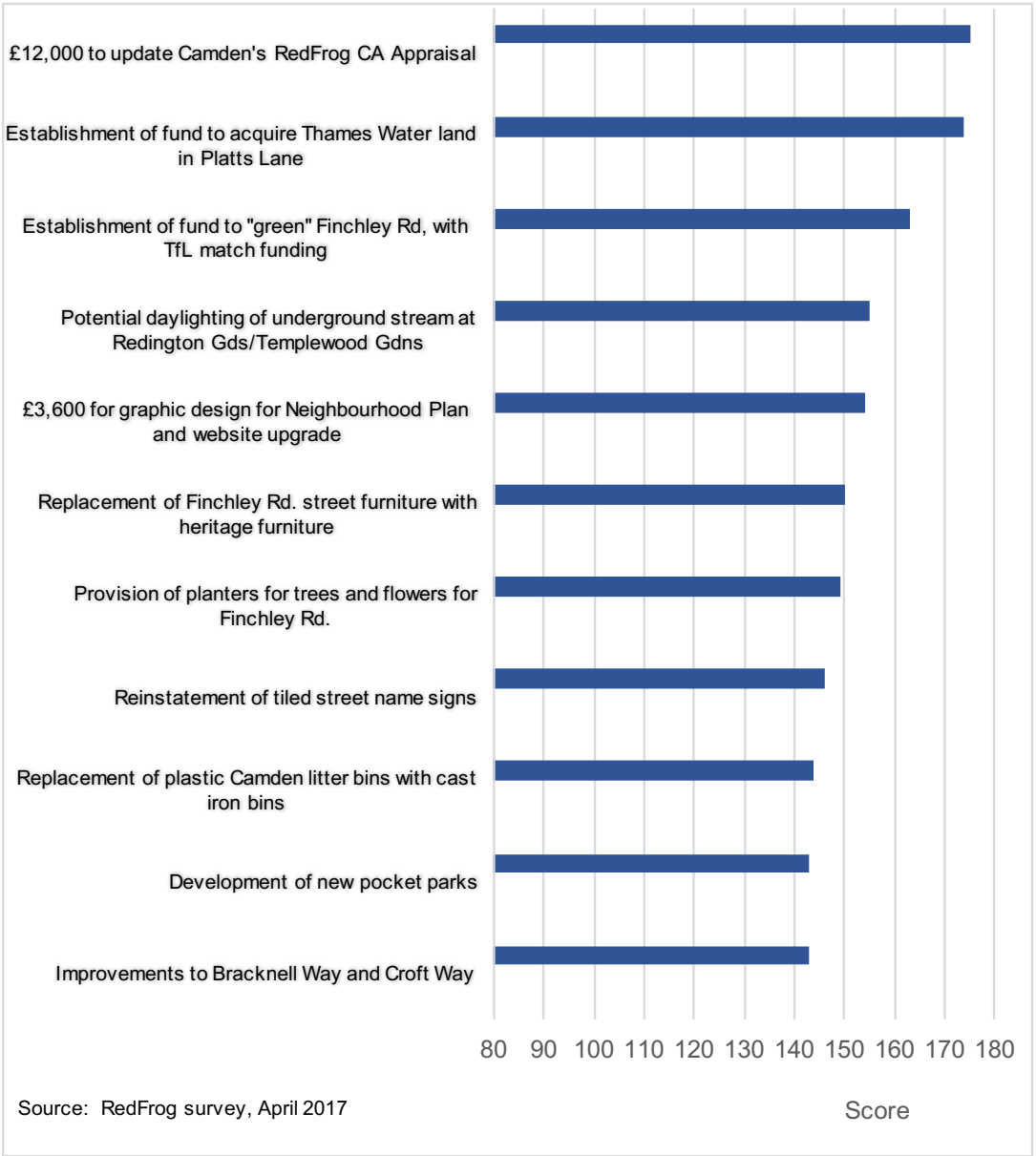
Long-term: Use the gathered information to produce a document on P&D to help guide and inform practice in the borough. Work with the greenspaces team to increase shrub varieties in parks: This will support greater natural predators. A list of approved tree species for residents, based on the Tree Planting Strategy.

Ongoing: Communicate with other boroughs, LTOA, Arb association etc to see the latest developments in P&D and follow best practice

Redington Frognal Neighbourhood Forum CIL Survey Update

The Forum's CIL survey was updated and a new survey circulated to 400 Forum members in April 2017. The survey of 19 questions was completed by 84 respondents.

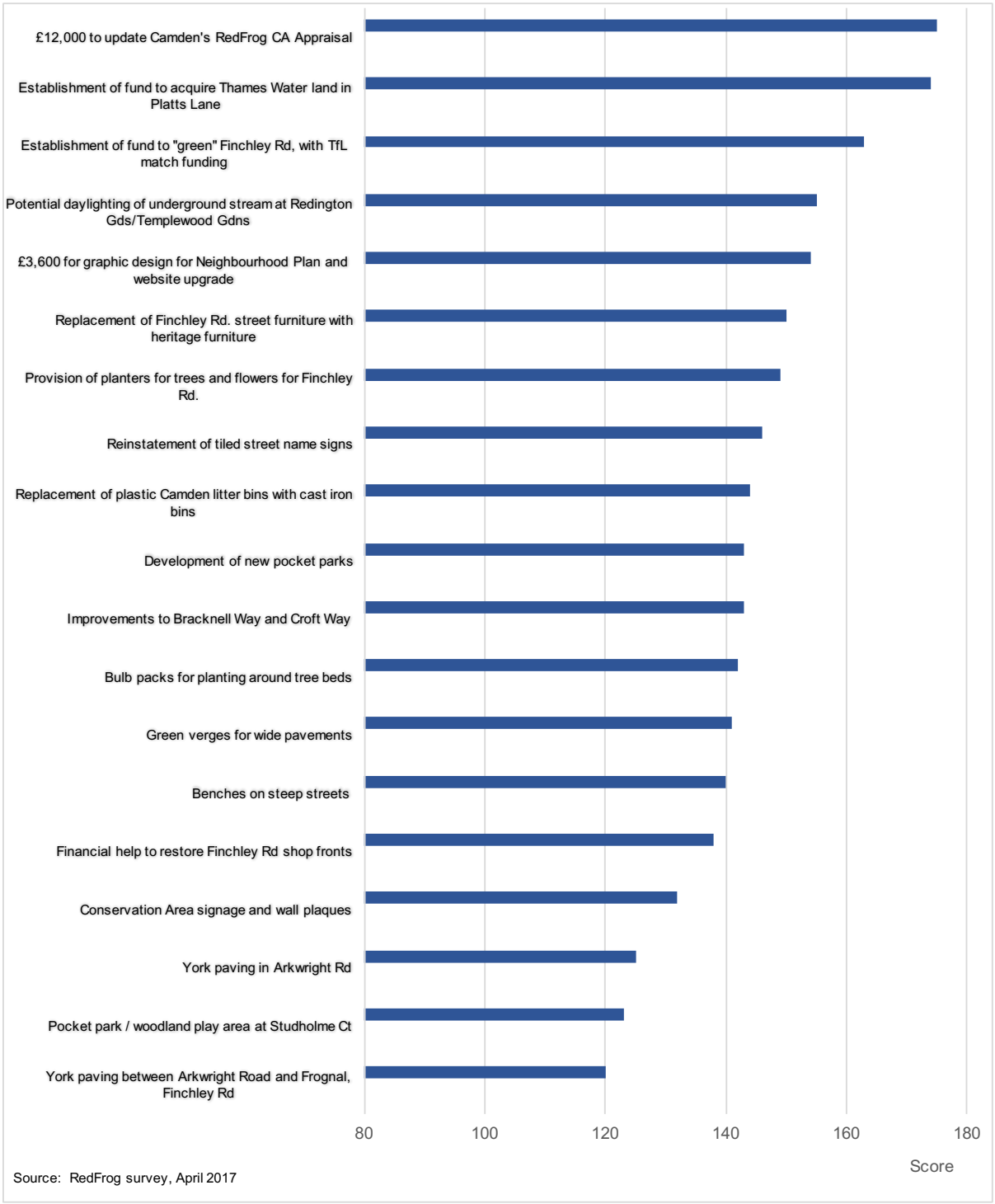
Top Eleven Priorities for CIL Spending, April 2017



Source: RedFrog survey, April 2017

High priority=3, medium priority=2, low priority=1

Top 19 Priorities for CIL Spending, April 2017



High priority=3, medium priority=2, low priority=1

REDINGTON FROGNAL
NEIGHBOURHOOD FORUM

12 January, 2020

Dear Cllr. Olad,

Losses of trees in the Redington Frognal Conservation Area

Thank you very much for the opportunity to provide documentation on tree losses in Camden.

Trees, such as poplar, were planted by the Victorians in the north of Camden, partly to reduce flooding in an area with many underground rivers. It is particularly regrettable to have lost 2,950 trees (40%) of all trees in a single Conservation Area in just six years at a time of climate emergency, losses to biodiversity and an increasing risk of surface water flooding.

Specific examples of tree fellings to facilitate development include:

- 21 trees at the Barratt site on the south side of Kidderpore Avenue
- 41 trees at the Mount Anvil site on the north side of Kidderpore Avenue
- 38 trees at 23 West Heath Road
- hundreds of other losses on a smaller scale, including at sites adjacent to polluted roads, such as Finchley Road and Fitzjohn's Avenue.

We know that similar losses are occurring in the Fitzjohn's and Netherhall Conservation Area.

With the benefit of CIL funds, Redington Frognal Neighbourhood Forum have been able to purchase ProximiTREE data to quantify changes in the stock of trees. This has been necessary to support Policy BGI 3 Tree Planting and Preservation in the draft Redington Frognal Neighbourhood Plan (about to undergo the Regulation 16 public consultation). The Policy aims to provide greater support to Camden's tree officers to resist felling for development purposes and to require tree planting by developers.

Losses of soft surface in the Redington Frognal Conservation Area

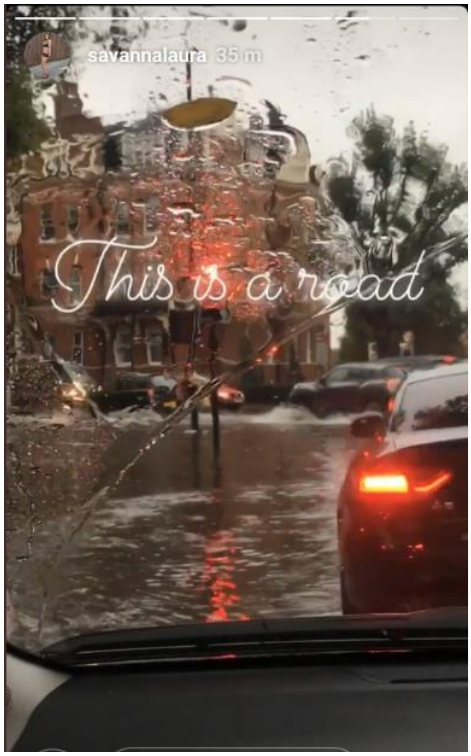
This high level of tree felling has been accompanied by a loss of soft natural surface and an attendant increase in hard surface, in both front and back gardens. In 2010, Redington Frognal Association prepared a case for the introduction of an Article 4 direction (along with 2,000 photographs, as requested by the Camden Heritage and Conservation Officer) to facilitate the introduction of an Article 4 direction in the Redington Frognal Conservation Area. This was never implemented, contributing to the continued degradation of the Conservation Area and a considerable cumulative increase in hard surface. With few remaining front gardens, soft surface is now also being lost from rear gardens, leaving diminished space for tree and shrub planting.

Ordnance Survey have quantified these losses at -14% since the buildings were originally constructed, but the data exclude losses due to hard surfaced off-street parking, patios, decking, swimming pools, changing rooms, tennis courts, garden buildings and outbuildings, including those constructed under permitted development rights.

These losses to soft surface are of particular concern in view of Camden's designation as a Lead Local Flood Authority under the Flood and Water Management Act 2010 and the inability of the drains and sewers to cope with surface water runoff.

Such losses to trees and soft surface are serious and unsustainable rate at a time of growing surface water flood risk which, in the words of Sir James Bevan, Chief Executive of the Environment Agency, is "*a real and growing threat – to life, to property, to the economy, to the country*".

Below are some photos of surface water flooding on 24.9.19 at Finchley Road / Heath Drive and West End Lane.



Recommendations

Radical solutions are needed to address real threats: in particular:

1. tree preservation orders to be placed on all mature native trees in Conservation Areas. Legal grounds for doing so include:

    - Contribution to the character or appearance of a conservation area. Trees are critical to the character of many, if not all, of Camden's Conservation Areas and serious concerns over tree losses and consequent harm to their character are recorded by the Conservation Area Advisory Committees.
    - Size and form;
    - Future potential as an amenity. [This might also include amenity value in respect of including to health and well being]
    - Rarity, cultural or historic value. [Many date from Victorian times and feature on the 1861 OS map];
    - Contribution to, and relationship with, the landscape.

- Visibility. The extent to which the tree can be seen from a public place, such as a road or footpath, or accessible by the public.

2. An Article 4 Direction to remove permitted development rights to hard surface front and rear gardens. The harm to Conservation Areas from hard surfacing front gardens is apparent from the photos on the following page and the full presentation made to Camden Heritage and Conservation Officer in 2010 and 2011 is available.

   We have further supporting evidence available and please do contact us if you have questions.

   Thank you very much for your support.

   Yours sincerely,

   Nancy Mayo

   Secretary

   Redington Frognal Neighbourhood Forum
   http://www.redfrogforum.org
   https://twitter.com/RedfrogNF

   REDINGTON FROGNAL
   NEIGHBOURHOOD FORUM

Front gardens retaining boundary hedges and soft surface

Hard-surfaced front gardens without boundary hedges

Neighbourhood Plan Objectives

Community

Summary | Design Survey | Collect Responses | Analyze Results

Edit Survey

Preview Survey | Send Survey »

To change the **look** of your survey, select a theme below.

Copy of Aqua | Edit Theme | Create Custom Theme

TITLE & LOGO Edit Title | Edit Logo | Edit Layout

REDFROG

Neighbourhood Plan Vision and Objectives

+ Add Page

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Introduction

The survey includes quite a number of questions, but they are very quickly completed and will be important for guiding the Neighbourhood Plan policies.

Please complete a questionnaire for each household member aged 18 and over.

Please note our email address: redfrogemail@gmail.com

Thank you for filling out this survey!

+ Add Question ▼

Q1 Edit Question ▼ | Add Question Logic | Move | Copy | Delete

1. Objective 1: To Preserve and Enhance the Redington Frognal Conservation Area Characteristics - Edwardian / Victorian architecture

	Agree strongly	Agree	Don't know	Disagree
Do you agree that there should be a presumption against demolition of buildings constructed between 1840 and 1930?	○	○	○	○

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Refurbished Edwardian property in Redington Road

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Q2 Edit Question ▼ Add Question Logic Move Copy Delete

2. Objective 1: To Preserve and Enhance the Redington Frognal Conservation Area Characteristics - modern architecture

	Agree strongly	Agree	Don't know	Disagree
Do you agree that there should be a presumption against demolition of post 1930 buildings, if they are of high architectural value?	○	○	○	○

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41 Frognal and its setting forms a positive contribution to the street scene

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Q3 Edit Question ▼ Add Question Logic Move Copy Delete

3. Objective 1: To Preserve and Enhance the Redington Frognal Conservation Area Characteristics - building

heights

	Agree strongly	Agree	Don't know	Disagree
Do you agree that new buildings must respect existing roof lines and be no more than 3 to 4 storeys in height?	○	○	○	○

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Uniform building heights

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Q4 Edit Question ▼ Add Question Logic Move Copy Delete

4. Objective 1: To Preserve and Enhance the Redington Frognal Conservation Area Characteristics – gaps between buildings

	Agree strongly	Agree	Don't know	Disagree
Do you agree that new buildings must respect the convention of incorporating a gap, or side alley, between the new building and neighbouring buildings, in order to afford pedestrian access and views of trees and greenery from the street?	○	○	○	○

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Gap between buildings affording green view from street

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Q5 Edit Question ▼ Add Question Logic Move Copy Delete

5. Objective 1: To Preserve and Enhance the Redington Frognal Conservation Area Characteristics - footprint size

	Agree strongly	Agree	Don't know	Disagree
Do you agree that the footprint of a new building should not exceed that of the building which it is replacing, i.e. no building out or onto the garden?	○	○	○	○

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Q6 Edit Question ▼ Add Question Logic Move Copy Delete

6. Objective 1: To Preserve and Enhance the Redington Frognal Conservation Area Characteristics – replacement of lost garden space

	Agree strongly	Agree	Don't know	Disagree
Do you agree that garden space, which has been lost, should be reinstated when a new building is constructed?	○	○	○	○

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Q7 Edit Question ▼ Add Question Logic Move Copy Delete

7. Objective 1: To Preserve and Enhance the Redington Frognal Conservation Area Characteristics – retention of front and side gardens

	Agree strongly	Agree	Don't know	Disagree
Do you agree that front and side gardens are to be retained, primarily, as green, soft-landscaped surfaces?	○	○	○	○

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Front garden providing year-round greenery

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Q8 Edit Question ▼ Add Question Logic Move Copy Delete

8. Objective 1: To Preserve and Enhance the Redington Frognal Conservation Area Characteristics – preservation of rear gardens

	Agree strongly	Agree	Don't know	Disagree
Do you agree that rear gardens are to be preserved as green, soft-landscaped surfaces?	○	○	○	○

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Rear gardens maintained as green space

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Q9 Edit Question ▼ Add Question Logic Move Copy Delete

9. Objective 1: To Preserve and Enhance the Redington Frognal Conservation Area Characteristics – preservation of front boundaries.

	Agree strongly	Agree	Don't know	Disagree
Do you agree that front boundary treatments of low retaining walls and hedges are to be retained and, where lost, reinstated, as the opportunity arises?	○	○	○	○

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Low retaining walls and hedges

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Q10 Edit Question ▼ Add Question Logic Move Copy Delete

10. Objective 1: To Preserve and Enhance the Redington Frognal Conservation Area Characteristics – new developments

	Agree strongly	Agree	Don't know	Disagree
Do you agree that new development is to be car-free, in line with Camden	○	○	○	○

policy elsewhere in the borough?

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Q11 Edit Question ▼ Add Question Logic Move Copy Delete

11. Objective 2: Greenery – Front garden car parks

	Agree strongly	Agree	Don't know	Disagree
Do you agree that there should be a presumption against the conversion of front gardens to parking space?	○	○	○	○

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Front garden car parks



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Q12 Edit Question ▼ Add Question Logic Move Copy Delete

12. Objective 2: Greenery – Street trees and hedges

	Agree strongly	Agree	Don't know	Disagree
Do you agree that it is important to maintain overall tree cover and to preserve hedges and mature native trees in the public realm.	○	○	○	○

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Hedges and trees providing a green street scene

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Q13 Edit Question ▼ Add Question Logic Move Copy Delete

13. Objective 2: Greenery - private trees and hedges

	Agree strongly	Agree	Don't know	Disagree
Do you agree that mature native trees and ancient hedgerows should be preserved, even when in private gardens?	○	○	○	○

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Front garden trees have been retained

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Q14 Edit Question ▼ Add Question Logic Move Copy Delete

14. Objective 2: Greenery - hedges

	Agree strongly	Agree	Don't know	Disagree
Do you agree that garden hedges are to be encouraged to demarcate boundaries and aid wildlife.	○	○	○	○

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Hedgerow in full bloom

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Q15 Edit Question ▼ Add Question Logic Move Copy Delete

15. Objective 2: Greenery – Rear garden trees forming habitat corridors

	Agree strongly	Agree	Don't know	Disagree
Do you agree that it is important to retain mature native and veteran trees, including those which form part of a habitat corridor, back-to-back, between rear gardens?	○	○	○	○

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Veteran oak at Sarum Chase (2007) - prior to die-back caused by contractors' equipment

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Rear garden tree line between Hollycroft Avenue and Platts Lane

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Q16 Edit Question ▼ Add Question Logic Move Copy Delete

16. Objective 3: Greenery – succession planting

	Agree strongly	Agree	Don't know	Disagree
In order to retain the area's tree canopy and tree cover, do you agree that a project to consider succession planting should be launched?	○	○	○	○

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Tree canopy in Hollycroft Avenue

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Q17 Edit Question ▼ | Add Question Logic | Move | Copy | Delete

17. Objective 2: Greenery - underground rivers

	Agree strongly	Agree	Don't know	Disagree
Are you in favour of developing a project to mark the course of underground rivers in the Conservation Area?	○	○	○	○

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Q18 Edit Question ▼ | Add Question Logic | Move | Copy | Delete

18. Objective 3: Enhancement of the Environment of Finchley Road – real-time air pollution visual displays

	Agree strongly	Agree	Don't know	Disagree
Do you think Camden should be asked to erect a real-time air pollution visual display on Finchley Road, as on Euston Road?	○	○	○	○

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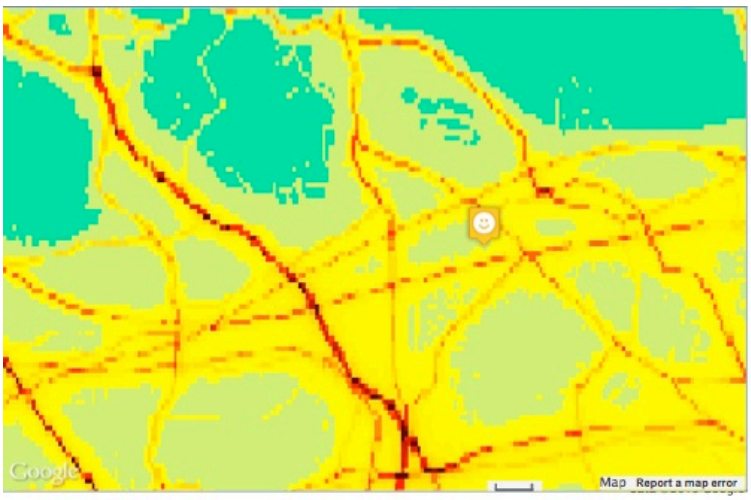
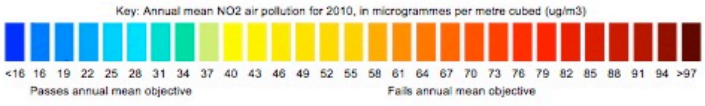
Finchley Road NO2 levels, 2010



Modelled annual mean NO2 air pollution, based on measurements made during *2010*.



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Q19 Edit Question ▼ Add Question Logic Move Copy Delete

19. Objective 3: Enhancement of the Environment of Finchley Road – prioritisation of walkability

	Agree strongly	Agree	Don't know	Disagree
Do you agree that we should work with TfL to seek the provision of wide, tree-lined, pedestrian-friendly pavements with good-quality street furniture, even pavements and the removal of unnecessary railings?	○	○	○	○

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Q20 Edit Question ▼ Add Question Logic Move Copy Delete

20. Objective 3: Enhancement of the Environment of Finchley Road – landscaping and greening

	Agree strongly	Agree	Don't know	Disagree
Do you agree with landscaping, physical improvements and greening	○	○	○	○

improvements and greening measures to Finchley Road?

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Q21 Edit Question ▼ Add Question Logic Move Copy Delete

21. Objective 3: Enhancement of the Environment of Finchley Road – a common utilities duct to enable tree planting along Finchley Road

	Agree strongly	Agree	Don't know	Disagree
Mature trees on Finchley Road are nearing the end of their lifespans, but cannot be replaced, on account of the utilities which run beneath the pavement. Space for tree planting would become available, if the utilities were to be laid in a shared duct. Do you agree that this is an aim to be pursued?	○	○	○	○

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Trench excavation for utilities ducts

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Q22 Edit Question ▼ Move Copy Delete

22. Objective 4: Sustainable Growth in Redington Frognal Conservation Area – mega mansions

	Agree strongly	Agree	Don't know	Disagree
A neighbourhood plan is required to support sustainable growth of homes.				
Do you support a presumption against the development of mega mansions of over 500 square metres, through conversion of properties previously used as flats or maisonettes?				

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Q23 Edit Question ▼ Add Question Logic Move Copy Delete

23. Objective 4: Sustainable Growth in the Redington Frognal Conservation Area – sustainable growth of homes

	Agree strongly	Agree	Don't know	Disagree
Would you favour the conversion or reconversion of very large houses into family flats, provided that the architectural character is maintained?				

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Q24 Edit Question ▼ Move Copy Delete

24. Objective 4: Sustainable Growth in Redington Frognal Conservation Area – meeting the needs of families, home workers and the elderly and Kidderpore Hall

	Agree strongly	Agree	Don't know	Disagree
Are you in favour of supporting home working through the development of a community facility with meeting space at Kidderpore Hall (the White House) in				

Kidderpore Avenue?				
How would you like to use this space: for meetings?	○	○	○	○
As a crèche?	○	○	○	○
For health and fitness?	○	○	○	○
Cultural events, film screenings?	○	○	○	○
Educational use, e.g. University of the Third Age, music lessons, language classes?	○	○	○	○
For entertainment?	○	○	○	○
For weddings, bar mitzvahs and parties, etc?	○	○	○	○
As a café?	○	○	○	○
As a pub / café?	○	○	○	○

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Kidderpore Hall

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Q25 Edit Question ▼ Add Question Logic Move Copy Delete

25. Objective 4: Sustainable Growth in Redington Frognal Conservation Area – Finchley Road businesses

	Agree strongly	Agree	Don't know	Disagree
Do you think it is important to aim to create a more pleasant trading environment for Finchley Road traders through, for example, greening measures and a cleaner street environment?	○	○	○	○

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Q26 Edit Question ▼ Add Question Logic Move Copy Delete

26. Objective 4: Sustainable Growth in Redington Frognal Conservation Area - development of community space

	Agree strongly	Agree	Don't know	Disagree
Do you agree that growth of homes and businesses in the area should be supported by the designation of the White House in Kidderpore Avenue as a civic community facility?	○	○	○	○

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Kidderpore Hall, with nature reserve to the rear

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Q27 Edit Question ▼ Add Question Logic Move Copy Delete

27. Objective 4: Sustainable Growth in Redington Frognal Conservation Area - preservation of nature reserve and gardens to rear of Kidderpore Hall

	Agree strongly	Agree	Don't know	Disagree
Do you agree that the existing Borough Grade II Site of Importance for Nature Conservation (behind Kidderpore Hall in Kidderpore Avenue) is to be preserved and enhanced for the benefit of wildlife and biodiversity and designated as local green space.	○	○	○	○

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Q28 Edit Question ▼ Add Question Logic Move Copy Delete

28. Objective 4: Sustainable Growth in the Redington Frognal Conservation Area – West Heath Lawn Tennis Club

	Agree strongly	Agree	Don't know	Disagree
West Heath Lawn Tennis Club has operated on the wooded Croft Way site since at least 1912. Do you agree that the site should be designated at Local Green Space to ensure it is preserved for the benefit of future generations?	○	○	○	○

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Grass courts at West Heath Lawn Tennis Club

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Q29 Edit Question ▼ Move Copy Delete

29. Objective 4: Sustainable Growth in the Redington Frognal Conservation Area – other new Local Green Space

	Agree strongly	Agree	Don't know	Disagree
Are you in favour of the development of other, new Local Green Space, such as:	○	○	○	○
Pocket Parks?	○	○	○	○
Green verges, e.g. grass / wildflower verges and shrubbery, where pavement width allows this?	○	○	○	○
Wooded areas, when land becomes available?	○	○	○	○

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Pocket Park at Elephant and Castle

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Planted roundabout

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Q30 Edit Question ▼ | Add Question Logic | Move | Copy | Delete

30. Objective 4: Sustainable Growth in the Redington Frognal Conservation Area – covered water reservoir in Platts Lane

	Agree strongly	Agree	Don't know	Disagree
The covered water reservoir in Platts Lane is situated on backland, surrounded by private gardens and the West Heath Lawn Tennis Club. In the event that it is declared redundant, do you agree that the site should become a community-supported nature reserve?	○	○	○	○

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Q31 Edit Question ▼ Add Question Logic Move Copy Delete

31. Objective 5: Redington Frognal Conservation Area as Centre for Tertiary Education, the Arts and Culture - retention of community and cultural facilities

	Agree strongly	Agree	Don't know	Disagree
Do you agree that it is important to retain the area's established community facilities, such as Camden Arts Centre and Hampstead School of Art?	○	○	○	○

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Q32 Edit Question ▼ Add Question Logic Move Copy Delete

32. Objective 6: Civic Pride

	Agree strongly	Agree	Don't know	Disagree
Do you support the objective of promoting civic pride in the conservation area through Conservation Area signage and wall plaques commemorating famous residents and architects?	○	○	○	○

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TG Masaryk lived in Platts Lane

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Q33 Edit Question ▼ Add Question Logic Move Copy Delete

33. Objective 7: Basement Excavation - footprint size

	Agree strongly	Agree	Don't know	Disagree
Do you agree that the footprint of a basement should be contained within the footprint of the original dwelling, in order to minimise loss of green space, danger to trees and potential increased surface water flooding?	○	○	○	○

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Q34 Edit Question ▼ Add Question Logic Move Copy Delete

34. Objective 7: Basement Excavation - excavation depth

	Agree strongly	Agree	Don't know	Disagree
Do you agree that, in order to minimise interference with the water table, basement excavation should be restricted to one storey (less than 3.5 metres above ground level)?	○	○	○	○

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Q35 Edit Question ▼ Add Question Logic Move Copy Delete

35. Objective 7: Basement Excavation - pavement licences

	Agree strongly	Agree	Don't know	None
Do you agree with the aim that, once planning				

permission has been consented for a basement excavation, the licence to remove a pavement from use should be restricted to just a few weeks?				

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Q36 Edit Question ▼ Add Question Logic Move Copy Delete

36. Other issues: car club space provision

	Agree strongly	Agree	Don't know	Disagree
Car clubs meet the needs of residents who like to have access to a car, without owning one. They also minimise take-up of on-street parking. Do you think we should lobby for additional car club spaces?				

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Q37 Edit Question ▼ Move Copy Delete

37. Other issues: controlled parking hours

	Agree strongly	Agree	Don't know	Disagree
To what extent do you support the controlled parking hours which operate in:				
CA-S?				
CA-H?				

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Q38 Edit Question ▼ Add Question Logic Move Copy Delete

38. Other issues: school travel plans

	Agree strongly	Agree	Don't know	Disagree
To what extent do you consider that the School Travel Plans of schools located in the area should be strictly enforced?	○	○	○	○

+ Add Question ▼ | Split Page Here

Q39 Edit Question ▼ | Add Question Logic | Move | Copy | Delete

39. Objective 6: Provision of benches

	Agree strongly	Agree	Don't know	Disagree
Do you support the idea of providing benches, particularly on streets with a steep gradient?	○	○	○	○

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Edwardian bench

+ Add Question ▼

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Q40 Edit Question ▼ Add Question Logic Move Copy Delete

40. Vision and Objectives: Overall

	Agree strongly	Agree	Don't know	Disagree
To what extent, overall, are you supportive of this vision and these objectives for the Redington Frognal Conservation Area?	○	○	○	○

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Q41 Edit Question ▼ Move Copy Delete

41. DO YOU HAVE ANY OTHER PLANNING COMMENTS?

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Q42 Edit Question ▼ Move Copy Delete

✱42. Email address

+ Add Question ▼ Split Page Here

Q43 Edit Question ▼ Move Copy Delete

43. Telephone number

+ Add Question ▼ Split Page Here

Q44 Edit Question ▼ Move Copy Delete

✱44. Street address

+ Add Question ▼ Split Page Here

Q45 Edit Question ▼ Add Question Logic Move Copy Delete

✱45. To comply with government legislation, our respondents must be statistically representative of the Fitzjohn's and Frognal ward. Please would you mind stating your age group

- Under 30
- 30-44
- 45-59
- 60-74
- 75+

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Q46 Edit Question ▼ Move Copy Delete

✱46. And household composition - how many people live in your household?

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Q47 Edit Question ▼ Add Question Logic Move Copy Delete

✱47. Do any members of your household work from home within the Redington Frognal Conservation Area?

- Yes: 1 person
- Yes: 2 people
- Yes: 3 or more people
- No

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Biodiversity Survey.

Finally, if you can bear to complete another survey, please do fill out our survey of wildlife observed in Red Frog gardens. The survey is being carried out in conjunction with Greenspace Initiative for Greater London (GiGL) and can be found at:

http://www.gigl.org.uk/online/redfrogsurvey.aspx

It would be very helpful to complete the survey on several occasions, at different times of the year, in order to develop records of the wildlife which visits / lives in our gardens.

THANK YOU!

+ Add Question ▼

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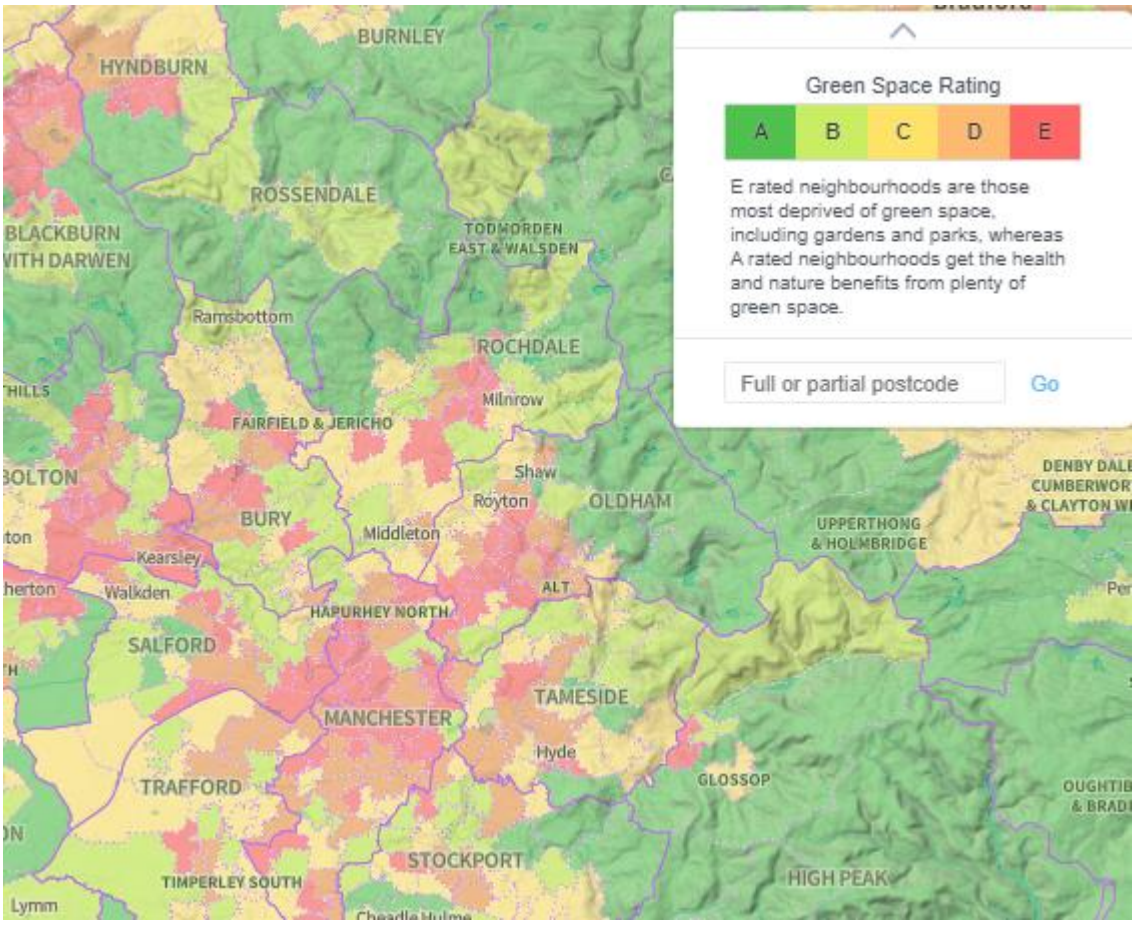
Back to My Surveys Preview Survey Send Survey »

Friends of the Earth

England's green space gap

How to end green space deprivation in England

September 2020



Contents

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Friends of the Earth Policy and Insight Unit
September 2020

Citation: England's green space gap - How to end green space deprivation in England, 2020, Friends of the Earth

Summary report: https://policy.friendsoftheearth.uk/insight/englands-green-space-gap
Map: https://friendsoftheearth.uk/nature/access-green-space-england-what-does-picture-look-your-area
Data set: https://friendsoftheearth.uk/nature/access-green-space-england-are-you-missing-out

Executive Summary

Friends of the Earth has used official data to map the availability of green space for people living in neighbourhoods across England for the first time.

We have combined official data on public green space, garden space, and open access land such as mountain, moor, heath, down or common land, with data on neighbourhood populations, ethnicity and income.

Analysis of the data reveals a marked disparity in green space availability, a strong correlation between green space deprivation and ethnicity, and a correlation between green space deprivation and income.

England's green space gap shows:

- About 1 in 5 of the population of England lose out on the benefits of quality local green space.
- 11.6 million people in England live in 1,257 neighborhoods which are the most deprived of green space.
- 928 neighbourhoods have slightly better but still very poor green space provision.

Our findings, which corroborate previous analysis by others of a strong correlation between green space deprivation and ethnicity, find that:

- 42% of people of Black, Asian and Minority Ethnic backgrounds (BAME) live in England's most green space-derived neighbourhoods.
- People of BAME background are more than twice as likely as a white person to live in a lowest rated neighbourhood.
- People of BAME background are twice more likely as a white person to live within England's most green space–deprived areas.

Unique multiple benefits of green space

England's green space gap complements the growing stable of studies on green space provision and the growing wealth of evidence on the substantial health benefits of quality green (and blue) spaces, parks, corridors and neighbourhoods.

The multi-functional benefits of green and blue space and contact with nature are already enjoyed by many people who tend not think twice about enjoying and gaining from their routine visits, whether for health, fitness, recreation, leisure and learning or, simply to get a brief break from the bricks, concrete, tarmac and daily rush of modern life.

Because the benefits are not limited to health this report also sets out how quality green spaces should be an essential tool for government to deploy in its work in other related areas including from urban cooling and flood prevention to carbon storage and the restoration of the nation's dwindling nature.

Recognition that having quality green and blue spaces and nature nearby provide us with important, unique and irreplaceable multiple benefits has been growing for some time, although the use of that evidence and knowledge has yet to result in the concerted and sustained levels of investment required for the benefits are to accrue to everyone, and to all areas of England.

Funding green spaces to level up

By highlighting where particular investment in green space can be directed the data is consistent with action to 'level up' proper provision of the kind of amenity which any self-respecting community should be able to expect as the norm.

Sustained funding, not one-off cash deposits, is needed to avoid good investments turning bad. Effective investment means plugging inadequate provision and then sustaining quality so that the benefits green spaces provide continue to accrue and play a full and unique multi-functional role in support of a multiple government aims.

Avoiding investment blips and drips is imperative to reverse decades of decline, to sustain the benefits, and to avoid the factors which lead to deterioration of green spaces and can signal wider social and community decline.

In this report, we have presented case studies, from city-wide planning to local initiatives, which showcase where green spaces have been successfully protected, managed, and created for the benefit of people and nature alike, along with some campaigns to save threatened spaces (Section 7). We also propose policy solutions and recommend ways forward (Section 8).

Recommendations

The clear consensus is that people need quality local parks and green spaces and more routine contact with nature. Central and local government, professions and communities can all now be part of reversing the decline of nature and green spaces and making 'nearby nature' and space for health and well-being a reality.

The knowledge and the means exist to weave sustained support for green spaces into existing strategies to boost public health, learning, skills and formal education alongside action to reduce climate changing emissions, and to restore England's deteriorating wildlife and natural habitats and people's lack of contact with nature.

Lasting commitment is imperative including through quality land use planning and proper funding over the long term, alongside novel forms of finance to provide the skilled services that are needed to properly plan, use and care for parks and green spaces to maximise their role and to prevent their decline. Recognising the national consensus over the undoubted value and importance of access to quality parks and green and blue spaces, we recommend that the government should:

1. Protect existing space forever
2. Create new green spaces
3. Improve the land use planning system so that it delivers for green space and nature
4. Invest in green spaces to level up the benefits
5. Fully factor in cost savings and benefits to policies and decisions
6. Ensure both quality and quantity of provision
7. Explore new forms of funding
8. Make parks and green space a statutory service
9. Ensure green space is developed with and for people of all cultures
10. Make green spaces hubs for learning and skills

Positive signs

The value of and the need for more quality green spaces existed before 2020 but has been reinforced by public reaction to the Covid-19 pandemic and lockdown, where both the role and the lack of quality green space has come to the fore.

There are signs that some parts of government do understand the role of green spaces perhaps more now than ever. The government cites the health benefits of green space and contact with nature in its 25 Year Environment Plan[1]:

> "Spending time in the natural environment – as a resident or a visitor – improves our mental health and feelings of wellbeing. It can reduce stress, fatigue, anxiety and depression. It can help boost immune systems, encourage physical activity and may reduce the risk of chronic diseases such as asthma. It can combat loneliness and bind communities together.
>
> "In the most deprived areas of England, people tend to have the poorest health and significantly less green space than wealthier areas.
>
> "Our aim is for more people, from all backgrounds, to engage with and spend time in green and blue spaces in their everyday lives."

In response to C-19, the government declaration that "people need parks" (see Section 2) and its 'levelling up' and *Build Back Greener and Better* promises speak to ensuring that everyone in England has access to quality green spaces.

That should also see the start of better governance, wiser investment, and the kind of sustained action to address inequalities which were identified both in the 2010 Marmot Review of health inequalities in England and the recent follow up which noted little change in health inequalities in the intervening decade.

Investment in accessible quality green space, especially in areas that have been overlooked or neglected, would certainly be a sound investment in people's physical and mental health and in their nation's natural and semi-natural assets.

Rising recognition of the health benefits of green spaces has led to the government giving £5 million to the National Academy for Social Prescribing, part of which will be for improved use of green spaces such as community gardens[2].

The ongoing challenge, because it is not about one-off spending sprees, is also not down to one government department but rests across most Whitehall departments and their agencies. Boosting access to quality green space should be part of the green bounce which can help the nation and its finances recover from the pandemic and be better prepared and more resilient in the future.

As Prime Minister Boris Johnson MP said when he was serving as Mayor of London:

> "The thing that we should be doing is improving and upgrading our green space by investing in parks, in planting trees and in generally improving the amenities and quality of life (of Londoners)."[3]

Section 1: Why Green Space matters

England's green space gap reveals marked disparities in public access to green space across England which mean that access to proven ways to support and boost people's health, in ways that also save the nation vast sums in avoided health costs and wider social and environmental benefits, is effectively being denied to a large proportion of the population in England.

The findings complement a growing body of evidence on, and a growing national consensus about, the role, importance and benefits of green space access for people's health, as well as the risks of allowing green spaces to be lost or eroded such as through lack of proper funding, neglect, and planning and development threats.

Many other recent studies have also examined the multiple benefits of local green space and routine contact with nature and the great outdoors for:

- Physical and mental health
- Reduced stress and improved well being
- Healthy childhood development
- Educational attainment
- Reduced health-related costs to society
- Better neighbourhoods and social cohesion.

The role and value of quality green spaces is also increasingly studied and understood for contributing to increased resilience to environmental pressures, including those linked to a changing climate and declining nature, such as:

- Reduced noise pollution
- Helping to reduce flood risk
- Moderating temperatures and harm from heatwaves
- Absorbing and storing carbon
- A partial role in mitigating air pollution
- Supporting and boosting wild animal and plant species
- Maintaining and restoring healthy functioning natural ecosystems.

Ways to make the most of these multiple benefits have been summarised in recent guidance to government, communities, and others with a stake in health, equalities, placemaking, resilience, and other aims[4].

Numerous renowned organisations, think tanks and research and funding bodies have also called for proper investment and provision of parks and green spaces not least the Open Spaces Society (OSS), which has called on the government to:

- Introduce a national plan for open spaces, with a national standard for the amount of green space and ring-fenced funding which will secure good-quality spaces close to people's homes.
- Place a duty on local authorities to ensure that everyone can enjoy good-quality, well-maintained and safe open space within 300 metres of their homes[5].

Government and green spaces

Recognition of the value and paucity of quality green spaces and parks existed before 2020's Covid-19 pandemic lockdown not least in the government's 25 Year Environment Plan launched in 2018 (see Executive Summary).

The Rt Hon. Rishi Sunak MP, Chancellor of the Exchequer, speaking in 2018 as the then Minister for Parks and Green Spaces in response to Fields in Trust's *Revaluing Parks and Green Spaces* work, said:

> "Our parks are precious, and I want to improve access to them for everyone - including the young, isolated and the vulnerable."[6]

Just before the lockdown, the Health Secretary, Rt Hon Matt Hancock MP spoke about the kind inequalities this report highlights:

> "Tackling this postcode inequality matters to this government. It's what we mean when we talk about 'levelling up'. The underlying factors are a complex interaction between demography and economy. But because healthcare inequalities are geographically concentrated, it means we can take a targeted approach."[7]

During the lockdown, the Communities Secretary, Rt Hon Robert Jenrick MP declared:

> "While the virus does not discriminate, we know that the lockdown is much harder for people who don't have a lot of living space, a garden, or anywhere for their children to run around. People need parks."[8]

Mr Jenrick's Housing, Communities and Local Government ministry's own planning policies also recognise the importance of green space (see Appendix 4).

The government's *People and Nature Survey* showed that during July 2020, almost half of England's population (46%) spent more time outside than before the virus (up from 44% in June and 26% in May 2020). 42% of adults reported that 'nature and wildlife is more important than ever to my wellbeing' and 35% said they were visiting local green and natural spaces more often.[9]

YouGov's July 2020 poll showed that most people favoured visits to parks and gardens over other ways to spend their time: "When asked how they felt about returning to certain attractions, most Brits (80%) say they feel comfortable returning to outdoor attractions such as parks and gardens – and over a third (37%) would feel very comfortable doing so."[10]

A lockdown survey by letting agents Benham and Reeves identified changing priorities for people looking to rent in London[11]. The survey found more people wanting outdoor space and local facilities and shows prospective renters' shifting priorities compared with their priorities before the pandemic. The most sought-after features, with their previous ranking in brackets, are:

1. Fast broadband (previously 2nd)
2. Outside space (7th)
3. Close to a park or green space (9th)
4. Concierge onsite (3rd)
5. Good transport links within less than 10 mins walk (1st)
6. Food shop on site (4th)

The government's own research also identifies clear inequalities in people's opportunities to access and engage with nature, green spaces and the great outdoors: annual monitoring of people's engagement with the natural environment by the government's nature watchdog, Natural England, shows that children from the most deprived areas are 20% less likely to spend time outside than those in affluent areas[12].

The survey also shows that 70% of children from white backgrounds spend time outside once a week compared with 56% of children from Black, Asian and Ethnic Minority (BAME) backgrounds. When asked how accessible they found local green space, 33% of white respondents strongly agreed that they found it accessible compared with 19% of BAME respondents who agreed about the ease of access. Neither figure is especially high.

Recognising the multi-purpose role played by green spaces, parks and nature areas, Natural England has stated that "everyone should have access to good quality natural greenspace near to where they live, i.e. 'Nature Nearby'[13]:

> "Nature nearby is good for people, good for wildlife and good for the environment", that quality open space is good for us, that access to natural green spaces for fresh air, exercise and quiet contemplation has benefits for both physical and mental health and that research provides good evidence of reductions in levels of heart disease, obesity and depression where people live close to green spaces."[14]

Green space, ethnicity and Covid-19

Soon after Robert Jenrick's positive "People need parks" statement, Fields in Trust updated its *Green Spaces Index*[15] and reported that:

- 2.69 million people in Britain do not live within 10 minutes' walk of green space.
- The degree of access to green space will reduce with rising population and with development pressures on green space.
- Britain has an average 32.94 square meters of green space per person, but there are large regional differences with people in the east Midlands, London, north east and north west of England having deficit access.

Another lockdown study by the Centre for Cities[16] assessed 62 urban areas across England and Wales and found varying amounts of 'exercisable space' for people to use during the limitations on movement outdoors:

- Milton Keynes came top for the access people living there have to green space with 47.0 square metres (sqm) of public parks and gardens per person.
- Northampton = 9.8 sqm of green space per person (nearly 18 per cent live in flats and are less likely to have access to garden space).
- Liverpool = 16.9 sqm per person.
- London = 15.1 sqm per person.
- Southend-On-Sea = 14.3 sqm per person (24% of people live in flats).
- Worthing = 3.4 sqm per person.

Andrew Carter of Centre for Cities, said:

> "As we all learn to live with the lockdown, having enough inside and outside space is a real help for some people. But where housing is the least affordable, people are less likely to have

> access to their own space – either in a flat or house or in the garden. That's something we know councils will be considering when they weigh up calls to close off green spaces."

Access to green space during lockdown and especially disparities in access by ethnicity has also been highlighted by the Office for National Statistics (ONS) whose analysis of data from Natural England and Ordnance Survey shows that one in eight households (12%) in Great Britain lacks access to garden space, whether private or shared.

In England, the ONS also report that people of black ethnicity are:

- nearly four times as likely as white people to lack access to outdoor space at home such as a garden (private or shared), patio or balcony (37% compared with 10%).
- 2.4 times less likely than those of white ethnicity to have a private garden, even when comparing people of similar age, social grade and living situation such as location and living with or without children 17.

The virus and lockdown have underlined such inequalities which compound susceptibility to the virus as The King's Fund, the independent health organisation, has identified:

> "The virus has taken a disproportional toll on groups already facing the poorest health outcomes. In particular, it has underlined the structural disadvantage experienced by people from black, Asian and minority ethnic communities who have been at much greater risk of contracting and dying from Covid-19. The economic and social consequences of measures to contain the virus risk worsening these inequalities further.
>
> "It is time for a reset in public policy to improve the population's health and tackle deeply entrenched inequalities. This includes responding to the direct impact of Covid-19 and redoubling efforts to reduce health inequalities more broadly, including by addressing socio-economic drivers of health such as housing, education, employment and access to affordable healthy food. This will be a true test of how serious the government is around its 'levelling up' agenda.
>
> "Sustained and coherent action is needed on the prevention and management of inequalities in health at all levels, including through local place-based partnerships spanning the NHS, local government, voluntary sector organisations and communities themselves."[18]

Most recently, in September 2020, when launching the government's *State of the Environment: Health, People and the Environment* report[19] Environment Agency Chief Executive, Sir James Bevan referenced both the health costs and savings and the ethnic disparities in green space access:

> "investing in a healthy environment is about the smartest thing we can do. It makes medical sense, because it will mean better health for all and less strain on the NHS. It makes economic sense, because it will save the NHS billions of pounds: the NHS could save an estimated £2.1bn every year in treatment costs if everyone in England had access to good quality green space. And it makes social sense, because those who live in poor environments are also those who have the worst health and the lowest incomes: levelling up the environment will also help level up everything else.
>
> "There is also racial inequality in terms of access to nature and the health benefits that brings: one study found that city communities with 40% or more black, Asian or ethnic

minority residents have access to 11 times fewer green spaces locally than those comprising mainly white residents."[20]

Better health for all

In July 2020, Public Health England (PHE) reviewed evidence of the health and wider social benefits of green space and reported that:

> "Evidence shows that living in a greener environment can promote and protect good health, and aid in recovery from illness and help with managing poor health. People who have greater exposure to greenspace have a range of more favourable physiological outcomes. Greener environments are also associated with better mental health and wellbeing outcomes including reduced levels of depression, anxiety, and fatigue, and enhanced quality of life for both children and adults. Greenspace can help to bind communities together, reduce loneliness, and mitigate the negative effects of air pollution, excessive noise, heat and flooding. Disadvantaged groups appear to gain a larger health benefit and have reduced socioeconomic-related inequalities in health when living in greener communities, so greenspace and a greener urban environment can also be used as an important tool in the drive to build a fairer society."[21]

PHE also referred to evidence of the role of green space in helping to address poor and changing environmental conditions and pressures such as excess heat in cities:

> "UK climate projections predict that heatwaves are likely to become more intense and more frequent in the future (106). Heat-related deaths are expected to rise by 257% by 2050, in the absence of any adaptation (126). Older age groups are more susceptible to the effects of heat, and there are indications that more deprived populations may often be disproportionately affected (101, 127-129). There is strong evidence that in an urban context greenspace is associated with heat reduction (49). Research indicates there is a 'park cool island' effect of between 1.5-3.5°C, with a stronger cooling effect for larger urban greenspace, and that shadegiving street trees also provide an important means of heat relief (103). Access to these 'cool islands' can help to offset the detrimental health effects of extreme heat. Greenspace also increase the cooling effect derived from water and wind sources (104). Other elements of green infrastructure such as roof gardens have demonstrated a reduction in the UHI effect (104, 105)."

Those lockdown studies build on a decade or more of evidence which link access to quality green space to tangible public health and other societal benefits. The government's recent focus on obesity and health is helpful but knowing the importance of fitness and exercise for good physical and mental health should not come as a surprise given the steady flow of studies and reviews of evidence which successive recent governments will have known about and have also commissioned.

The government asked Professor Sir Michael Marmot to look at health inequalities in England. In 2010, the landmark *Review of Health Inequalities in England post 2010,* known as the Marmot Review, presented its report, *Fair Society, Healthy Lives*[22] and referenced a host of studies on the beneficial health effects of green space including:

- "Creating a physical environment in which people can live healthier lives with a greater sense of well-being is a hugely significant factor in reducing health inequalities. Living close to areas of green space – parks, woodland and other open spaces – can improve health, regardless of social class."[23]

- Numerous studies point to the direct benefits of green space to both physical and mental health and wellbeing[24].
- Green spaces have been associated with a decrease in health complaints[25] blood pressure and cholesterol, improved mental health and reduced stress levels,[26] perceived better general health,[27] and the ability to face problems[28].
- The presence of green space also has indirect benefits: it encourages social contact and integration, provides space for physical activity and play, improves air quality and reduces urban heat island effects[29].
- People who are most at risk of poor health are more likely to live in the most deprived environments, which can have a cumulative negative influence on stress levels, self-esteem, weight and physical activity[30].

Professor Marmot also referred to the importance of people having a role in shaping the communities and places which influence physical and mental health and wellbeing and described how inequalities among communities relate to inequalities in health.

Topically, Marmot suggested that the budget at the time for roadbuilding could instead be used to create 1,000 new parks across England. The roads budget has grown substantially since 2010 and the 2020 Budget has committing £27.4 billion to road building by 2025.

Meanwhile, spending on parks and green space remains stuck in reverse gear and certainly not reflecting the unique cost benefits they provide (also see Section 2).

Notably, the recent 10 year follow up to the Marmot Review has found that: "Since 2010 life expectancy in England has stalled; this has not happened since at least 1900", and recommended that "Funding should be allocated in a proportionate way – those areas that have lost the most and are more deprived must receive renewed investment first - and at higher levels."[31] [32]

In the same year that Marmot reported, work by the Design Council and the Commission for Architecture and the Built Environment (CABE) identified the relationship between green space deprivation and ethnicity[33]. In-depth research in six deprived and ethnically diverse areas studies how residents viewed the importance of green space within their areas, how the green space is used, and the conditions needed to improve use.

A year later, in 2011, the UK's four Chief Medical Officers (CMOs) asserted the importance of, and issued guidance for, different kinds of physical activity for people of all ages from early years to older adults, ranging from gentle strolls and household tasks to more strenuous activity:

> "Regular physical activity can reduce the risk of many chronic conditions including coronary heart disease, stroke, type 2 diabetes, cancer, obesity, mental health problems and musculoskeletal conditions. Even relatively small increases in physical activity are associated with some protection against chronic diseases and an improved quality of life...
>
> "In addition, the report highlights the risks of sedentary behaviour for all age groups. Emerging evidence shows an association between sedentary behaviour and overweight and obesity, with some research also suggesting that sedentary behaviour is independently associated with all-cause mortality, type 2 diabetes, some types of cancer and metabolic dysfunction."[34]

The CMO's also highlighted estimated economic costs of inactivity at that time:

> "The estimated direct cost of physical inactivity to the NHS across the UK is £1.06 billion. This is based upon five conditions specifically linked to inactivity, namely coronary heart disease, stroke, diabetes, colorectal cancer and breast cancer. This figure represents a conservative estimate, since it excludes the costs of other diseases and health problems, such as osteoporosis and falls, which affect many older people."

Addressing inequality of provision and access, for example in relation to children (pages 28-29), the CMOs said:

> "In some areas, the environment may not be conducive to being physically active. However, there is also a population trend towards spending more time inside, where technology and in-house entertainment systems can increase screen watching and sedentary behaviours. Subsequently, less time is spent in active pursuits.
>
> "Finally, encouraging childhood physical activity is especially important for children from disadvantaged or vulnerable groups or where family or peer support for being active is limited."

On access more generally, the CMO's state (page 47) that:

> "These guidelines apply across the population, irrespective of gender, race or socio-economic status. However, barriers related to safety, culture and access, for example, can have a disproportionate effect upon the ability of individuals to respond to the guidelines; therefore, interventions to promote physical activity must consider this. Fear of traffic or strangers can often dissuade parents from allowing children to walk to school or play outdoors. Similarly, perceptions of violence in the community can restrict people's movement outside their house or car. These guidelines seek to support a more balanced assessment of risk compared with the important health benefits of physical activity."

The CMOs conclude (page 49) with a call for proper protection of parks and green spaces:

> "We also face significant challenges in the urban environment. As there is increasing pressure on open space, it becomes more important to protect parks and green spaces, and ensure that the environment encourages walking and cycling – especially for short urban journeys."

The National Children's Bureau reported in *Great Expectations* that:

- Children living in deprived areas are nine times less likely than those living in affluent areas to have access to green space and places to play.
- Boys living in deprived areas are three times more likely to be obese than boys growing up in affluent areas, while girls are twice as likely[35].

An earlier NCB briefing on how children's and young people's health is affected by green space access[36], cites earlier governmental policies on public health and attempts to address obesity:

> "The Public Health White Paper, 'Healthy Lives, Healthy People'[37] frequently refers to access to green space as an influencer of the health and wellbeing of communities (see esp. paras. 3.34-3.37). It links this to additional measures to promote active sport.
>
> "The Call to Action on Obesity[38] suggests local authorities should use opportunities to ensure the widest possible access to opportunities to be physically active through the use of parks and other outdoor spaces, as well as drawing upon sport and leisure services.

> "An indicator of utilization of green space for exercise/health reasons is included in the Public Health Outcomes Framework. Although the current measure for this only records this for those aged over 16, the Children and Young People's Health Outcomes Forum has recommended that, along with other indicators, this is adapted to record to include children and young people."

Evidence of the benefits of green space for exercise and physical health has therefore been in abundance for some time. Studies also have also started examining the role of urban green spaces in boosting people's mental health, and even being a form of protection for those at risk of mental illness[39]. A 2013 study found that:

> "...on average, individuals have both lower mental distress and higher well-being when living in urban areas with more green space. Although effects at the individual level were small, the potential cumulative benefit at the community level highlights the importance of policies to protect and promote urban green spaces for well-being."[40]

A 2014 study of people's mental health after moving closer to and away from greener areas concludes that:

> "...individuals who moved to greener areas had significantly better mental health...Moving to greener urban areas was associated with sustained mental health improvements, suggesting that environmental policies to increase urban green space may have sustainable public health benefits."[41]

The 2014 update to the UK National Ecosystem Assessment (UK NEA) refers to urban parks being the most visited spaces and how this "has a positive effect on well-being through increased enjoyment and/or increased relaxation."[42]

A 2014 review of health inequalities and access to green space by the Institute of Health Equity (IHE) of the University College of London (UCL) reported that "Green space is linked to greater levels of physical activity and associated health benefits."[43] The IHE cited findings from various studies to support this, including that:

- People living in areas with large amounts of green space were three times as likely to be physically active than people living in areas where there is little green space[44].
- Access and proximity to green space are unequally distributed across the population. For example, the most affluent 20% of wards in England have five times the amount of green space compared with the most deprived 10% of wards[45].
- People who live in the most deprived communities are ten times less likely to live in the greenest areas than people who live in the least deprived communities[46].
- Distribution of green space is also related to levels of urbanisation which exposes people to multiple stressors from noise, pollution, crowding, fear of crime and limited access to good quality green spaces[47].
- A study designed to test the association between green space and changes in the body mass index (BMI) of predominantly economically disadvantaged children found that, after controlling for ethnicity, gender, age and socioeconomic status, children living in areas with more green space had lower BMI scores than children living in areas with less green space. Higher levels of green space were associated with lower BMI scores over a two-year period. This may be the result of increased physical activity and time spent outdoors[48].

A 2018 government-commissioned study further confirmed that proximity to green spaces reduces mortality rates and improves mental wellbeing[49]:

- Living in greener environments is associated with reduced mortality.
- Socio-economic health inequalities tend to be lower in greener living environments.
- There is strong and consistent evidence for mental health and wellbeing benefits arising from exposure to natural environments, including reductions in psychological stress, fatigue, anxiety and depression and the benefits may be most significant for marginalised groups.

Actual time spent in green spaces

Researchers have recommended a 'threshold' amount of time spent in nature of 120 minutes a week[50]. A 2019 study found that people spending 120 minutes in green space / having contact with nature in a week reported consistently higher levels of both health and well-being than those who reported no exposure.

Allowing for the need for more study, the study team examined the benefits of accessing green spaces and nature based on the amount of actual time spent outdoors (known as 'direct exposure'), not just on residential proximity, because, as they put it:

> "...Direct exposure, or more specifically in the current context, recreational time spent in natural environments per week, cannot accurately be inferred from neighbourhood greenspace near the home.
>
> "...the amount of greenspace in one's neighbourhood (e.g. percent of land cover in a 1 km radius from the home), or the distance of one's home to the nearest publicly accessible green space or park is only one way of assessing an individual's level of nature exposure...
>
> "That the ≥120 mins "threshold" was present even for those who lived in low greenspace areas reflects the importance of measuring recreational nature contact directly when possible, rather than simply using residential proximity as a proxy for all types of nature exposure. People travel beyond their local neighbourhoods to access recreational nature experiences, and indeed in our own data those who lived in the least green areas had higher odds of spending ≥120 mins in nature than those living in greener neighbourhoods. Impoverished local opportunities need not be a barrier to nature exposure. That the "threshold" was also present for those with long-term illnesses/disability, suggests that the positive overall association in the data was not simply due to healthier people visiting nature more often."

Overcoming isolation

Green spaces can also be part of action to address the isolation and disconnected communities which affects people of all ages and backgrounds, and which has been estimated to cost £32 billion a year[51]. Even so, the government's 2018 loneliness strategy[52] and its 2020 report on progress tend to overlook contact with nature and access to green space[53].

Addressing loneliness in *Urban loneliness and the built environment*, the Future Spaces Foundation reports that "The physical backdrop to our lives – the places where we live, work and socialise – has a huge effect on how unified or isolated we feel day to day" and recommends that incorporating more 'third places' within cities[54]:

> "Open areas where people can socialise without necessarily spending money play an important role in nurturing personal relationships. Local authorities and urban designers should actively seek to design third places – including markets, gardens, plazas, parks and playgrounds – into urban neighbourhoods so communities have safe, vibrant public places where they can spend time with friends, family and neighbours. Policymakers should consider adopting strategies for creating and funding these hubs with a view towards encouraging social connections in the community." (page 42)
>
> "...it's worth thinking about the positioning of cities' green spaces, which have been shown in research around the world to combat loneliness both directly and indirectly, providing enclaves where people can connect with nature and each other." (page 50)

Rural green space

Although rural areas tend to have more green space research indicates that public access to, and the quality of, green space in rural areas is often problematic as amenities such as lighting, safety, upkeep, suitability of paths and play equipment are often of a poor standard[55]. Therefore, it is important that rural green spaces are accessible and well maintained to enable residents to make the most of them.

Visits to National Parks and AONBs can be truly inspirational breaks from everyday life as the government's 2019 review of England's National Parks, AONBs and other protected landscapes identified. The review's recommendations included "a stronger mission to connect all people with our national landscapes", "A night under the stars in a national landscape for every child", and measures "to increase the ethnic diversity of visitors".[56]

CPRE mapped the proximity of England's population to its network of highly protected green landscapes such as National Parks and Areas of Outstanding Natural Beauty (AONBs), and reported that:

- Around 64% of England's population lives within a 15-mile catchment of such protected landscapes leaving 36% of England's population living outside of the 15-mile catchment.
- Of the 27 million people living in England's largest towns and cities 10.4 million are outside of the 15-mile catchment of National Parks and AONBs.
- Almost half of people in England's most deprived areas live outside of the 15-mile catchment and "so are less likely to reap the benefits of landscapes designated for the nation."[57]

Everyone in England *should* be able to access these and other great rural landscapes and spaces as well as having quality green space on their doorstep for the rest (majority) of the time when they cannot readily visit a National Park or AONB.

Where efforts have been made to improve public access in rural areas, especially for groups that tend not to use green spaces, the results and benefits have been notable. For example, the Woodlands Projects sought to improve access to woodland areas of Kent, Devon, Derbyshire, Wiltshire and Nottinghamshire[58].

The projects targeted key groups under-represented in sporting activities: women and girls, disabled people, people from black and minority ethnic backgrounds (BME), under-16s, over-45s and people on low incomes. Projects to improve access to green space and participation of targeted groups included activity days and tree festivals and staff-led activities such as health walks, cycle rides, and nature walks.

The project significantly increased the total number of visitors across three of the projects (other projects did not measure total numbers of visitors), from 391,340 in 2006-07 to 686,905 in 07-08, including an increased number of BME visitors, people aged 16-44 and families, female visitors and increased participation in physical activities.

Section 2: Quality counts

Quality and quantity matter

Both the quality and the quantity of accessible green space matter. A modest patch of mown grass in an area with very little green space is better than no space at all, and it is likely to be valued by people for kicking a ball about or simply for being a break from the dominant built environment. Equally, low quality green spaces can easily become a magnet for unsociable behaviour and can come to symbolise an area's neglect and decline.

Much better for that humble patch to be re-purposed and managed to play a greater, multi-functional role, for example by also providing people with shade (tree cover), exercise (outdoor gyms), and contact with nature such as by having areas to grow food, which can be a focal point for developing skills and confidence, and diverse planting and habitats for wild species to have food and shelter. So much the better if the space can also be used as a link between communities, and so on.

As well as direct health benefits from the use of green spaces and parks covered in this report, this section summarises how quality, multi-functional green spaces and parks also supports public health and relieves pressure on health services and budgets in other ways that deliver on multiple social needs and government aims.

Green space as a money-spinner

As well being an essential health boost, the frequent personal use of parks and green spaces is shown to be worth over £30 billion a year to the UK population according to Fields in Trust's *Green Spaces Index*. That value translates into an estimated saving to the NHS of at least £100 million a year from fewer GP visits and dispensed prescriptions alone.[59]

Those benefits and savings would be considerably higher if everyone could share these immense free "natural health service" benefits by having better and more equal access to local parks, green and open spaces and the nature and other features they offer. As mentioned in section 1, the government's Environment Agency puts the figure at £2.1 bn a year if everyone has proper access to quality green space[60].

Looked at another way, a 2016 study for the government's nature watchdog, Natural England, explored the possible extra costs to health services from declining access to green space[61]. The study explored the potential effects on the health and wellbeing of people who would not exercise elsewhere if their access to green space diminished. For example, the study identified over 700,000 regular walkers who would be unlikely to replace their walks with exercise elsewhere, should the accessibility or quality of their local environment decline. It is estimated that the loss of this space alone could lead to mortality and morbidity valued at over £450 million a year.

Further indications of the kind of financial payback involved are economic valuations of green spaces in Birmingham and in London which have found substantial but often overlooked cost benefits.

In Birmingham, an economic assessment of the health and natural capital benefits of the city's green spaces and parks "reveals that the benefits provided by these valuable natural capital assets have an indicative value of £11.4 billion (gross asset value); calculated over a 25 year assessment period", including:

- £4.6 billion in health benefits. The total annual benefits add up to £619 million.
- The value of Council-managed parks and greenspaces to each resident is approximately £542 every year.
- The total net-value (benefits minus costs) of Council-managed natural capital assets is in the order of £11 billion over 25 years or £594 million annually.
- This means that each £1 the Council spends on parks and greenspaces returns more than £24 to society[62].

A similar assessment of London's public green spaces found that:

- Public green spaces across London have a gross asset value in excess of £91 billion, providing services valued at £5 bn per year.
- For each £1 spent by local authorities and their partners on public green space, Londoners enjoy at least £27 in value.
- Londoners avoid £950 m per year in health costs due to public green space.
- The value of recreational activities is put at £926 million per year.
- The monetary value to the average London household of being in close proximity to a park or green space is over £900 per year.
- These economic benefits are not spread equally across / within boroughs[63].

Research for the London Green Spaces Commission shows that investment in public health interventions which promote exercise in green space in the London Borough Croydon has demonstrably reduced spending on adult social care[64]. Every £100 spent by the Borough on green spaces is estimated to save £12 in social care costs particularly in relation to three health conditions closely related to the lack of physical exercise: stroke, dementia and heart disease. Such savings arising at the same rate per capita in the rest of London would equate to around £10 million per year, the research estimated.

In *Making Parks Count – the Case for Parks*, The Parks Alliance presents a comprehensive and compelling evidence base and business and economic case for the value of parks covering their many and varied health, local economic, environmental and wider community benefits:

> "...how parks in England deliver over £6.6bn of health, climate change and environmental benefits each year including £2.2bn in avoided health costs alone and are worth £140 per year to each urban resident. For every £1 spent on parks in England an estimated £7 in additional value for health and wellbeing and the environment is generated. The case clearly demonstrates that parks are a smart investment. Unfortunately, because these returns have never been properly understood, parks have suffered from years of under funding and there

> remain gross inequalities in access to quality green spaces across the country. Making Parks Count presents the case for turning this around."[65]

A study of conservation activity in nature reserves found that it helped people to feel "significantly better, both emotionally and physically" from anxiety, stress or mild depression they experienced meaning fewer GP visits and greater chance of being fit to return to work.[66] The three-year study by Leeds Beckett University's School of Health & Community found an excellent social return on investment:

- There is an £8.50 social return for every £1 invested in regular volunteering projects which aid healthy lifestyles, physical activity or overcome loneliness.
- For more costly specialised health or social needs projects which connect people to nature, the social return is £6.88 for every £1 invested.

Professor Anne-Marie Bagnall said:

> "We can therefore say with confidence that, based on evidence from independent research, these programmes can be effective in both maintaining good wellbeing and tackling poor wellbeing arising from social issues such as loneliness, inactivity and poor mental health. The significant return on investment of conservation activities in nature means that they should be encouraged as part of psychological wellbeing interventions."[67]

The multi-purpose role and 'natural health service' benefits of quality green space has been described by researchers as a 'triple win' for improved health, reduced heath inequalities and improved environmental conditions, and "Where these multiple benefits are fully appreciated and evaluated, the costs are more likely to be justifiable."[68]

These financial costs, savings and benefits should be factored fully into policies and decisions about land use, the design and layout of development, and ongoing use and aftercare, instead of remaining either hidden or noted in papers and reports and not applied in practice (see Recommendations).

Boosting access to quality green space should be part of the green economic bounce which can help the nation and its finances recover from the pandemic and be better prepared and more resilient in the future.

The need for both quality and quantity are also underlined by a study of England's eight Core Cities plus London by the Royal Institute of British Architects (RIBA) which found "a clear link between land use and public health in cities" especially the availability of quality green space[69]. Using data on life expectancy, child obesity, diabetes and physical activity, RIBA reported:

- Healthier urban areas have more green space and a lower percentage of land taken up by housing.
- "a robust correlation" between people living in urban areas with higher percentages of housing and lower levels of green space being less physically active, more obese and have higher levels of diabetes.
- Healthier areas had a fifth more green space and almost half the percentage of land occupied by housing than those with the least healthy populations.

- That, on levels of diabetes, the five council areas outside London with the lowest levels of diabetes had on average 68.7 per cent of green space and 3.6 per cent of housing. By contrast, the five authorities outside London with the highest levels of diabetes had on average 43.5 per cent green space and 7.1 per cent housing.

Based on interviews with the public, RIBA also reported that "it is the quality, not quantity, of streets and parks that will encourage them to walk more."

RIBA recommended that local authorities in urban areas with less than 50 per cent green space and/or with more than 5 per cent of their area occupied by housing, should liaise with their health and wellbeing board to produce a Healthy Infrastructure Action Plan, as part of their Local (land use) Plan.

Better quality = better experience

It may be unsurprising, but is worth repeating and reflecting, that people's experiences in local green spaces are improved by the quality and natural richness of spaces and places, and this is supported by recent studies on the perception and frequency of use of local green spaces:

- How people perceive both accessibility *and* the quality of local green spaces, and how their perceptions influence their decisions to visit them and to use spaces for physical activity is examined in a 2016 study[70].
- A 2017 study examines the quality of experience through frequency of visits often as part of everyday activity such as walking to work, the shops, school or daily views of green space. Underlining previous evidence on the benefits of greens space and contact with nature and the researchers say that they:

  "demonstrate that nature close to the home is associated with quantifiable benefits to population health. We found measurably better mental health, social health, positive physical behaviour and nature orientation with greater frequency and duration of time spent in nearby nature. We also showed lower levels of depression and greater nature orientation in people who live in greener neighbourhoods."[71]

Moreover, the researchers found that:

> "...the frequency of nature exposure was a stronger predictor than the duration of exposure. This has implications for the design of health interventions. It has been recognised in the sport sciences that short frequent exposures are a time-efficient strategy to induce health outcomes. Thus, people may be able to gain their necessary nature dose while going about their daily activities, such as walking to shops, or spending time in a room with a view of nature."

Heat, heat stress and threats to health

There is growing evidence of how green space, trees and vegetation can help reduce and moderate excessive heat and keep places areas cooler than would otherwise be the case. Meanwhile, urban green space in England alone has declined from 63% to 56% between in 2001 and 2016[72].

Heat and heat stress applies to most locations, and not just during heatwaves, but is particularly witnessed in towns and cities because of the 'urban heat island' (UHI) effect, where heat is retained in urban areas because of a lack of natural soils and vegetation, which has been replaced with a high concentration of buildings, roofs, roads and other heat-absorbing hard surfacing, and which absorbs and re-releases heat.

As a result, people living in towns and cities are particularly - but not exclusively - at risk of heat-related stress and health effects in warmer conditions and especially during extreme heat, because locally-generated heat exacerbates the effects of regional and nationwide heatwaves.

More frequent and dangerous heatwaves are a consequence of a changing climate and are forecast to be more frequent in coming decades. By the 2040s, heatwaves as severe as 2003 could occur every other year[73]. The Met Office has advised that extreme temperature events in Europe are now 10 times more likely than they were in the early 2000s[74]. The Hadley Centre has also advised that:

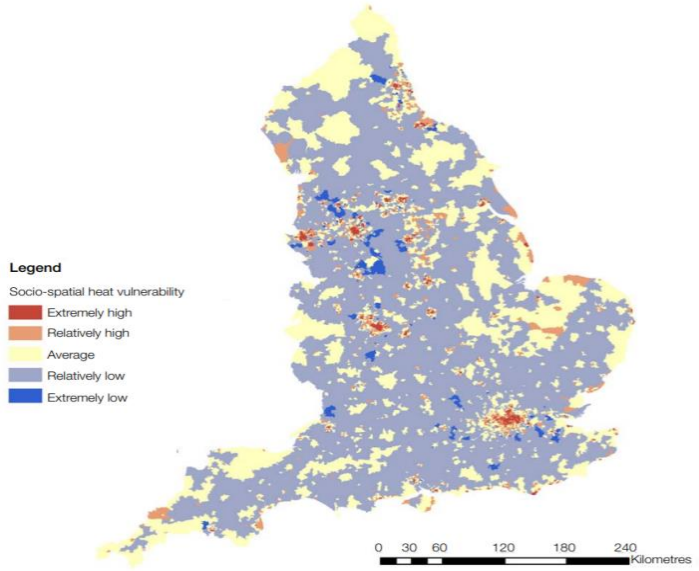
> "Hot summers are expected to become more common. In the recent past (1981- 2000) the chance of seeing a summer as hot as 2018 was low (<10%). The chance has already increased due to climate change and is now between 10-25%. With future warming, hot summers by mid-century could become even more common, near to 50%."[75]

Examining the links between social conditions and vulnerability to heat a Joseph Rowntree Foundation study found that around 10% of neighbourhoods in the north west England, the west Midlands and Yorkshire and The Humber are classified as extremely socially heat vulnerable, while London has 40% of the total number of extremely high socially heat-vulnerable[76].

> "The proportion of English neighbourhoods estimated to have extremely high social vulnerability with respect to heat is around 9% compared to only 1% with extremely low heat-related social vulnerability. Taken as a whole, extreme heat-related social vulnerability is an urban phenomenon (see Figure 7, below) although the inability to recover from heatwaves has a rural dimension given that people living in more remote neighbourhoods have lower accessibility to medical services through GPs and hospitals (see Figure 8d). There is also a coastal component to the distribution of very socially vulnerable neighbourhoods with respect to heat, e.g. along the south coast of England. This partly reflects the pattern of sensitive populations, which is the same in the contexts of both flooding and heat, and is despite many of these areas benefiting from relatively low enhanced exposure to heat compared to the English mean. Overall, 20% of the extremely high cases have an average distance from the coast of less than 1km and 36% are within 2km. There is evidence of joint social vulnerability to multiple climate-related hazards in England since 64% of the extremely

socially vulnerable neighbourhoods in the context of flood are also classed as being extremely socially vulnerable with respect to heat."

Figure 7: Socio-spatial heat vulnerability in England



Source: Boundary data: EDINA UKBORDERS, Crown copyright

Recent heatwaves

Heatwaves caused by excessive heat in the UK are expected to rise from 2,000 to approximately 7,000 each year by the 2050s[77].

The NHS's *Heatwave Plan for England* provides guidance to health practitioners and the public and a heat-health alert service operates across England during June to September. But, in general, the nation appears ill-prepared to prevent harm from excessive heat in homes, schools, workplaces and hospitals and on transport systems.

Public Health England reported on excess deaths observed during the four heatwaves of summer 2018. A total estimated 863 excess deaths were observed compared with 778 deaths in 2017, 908 in 2016, 2,323 in 2006 and 2,234 in 2003[78].

Heatwaves in July 2019 saw NHS attendances of 2,266,913 of which 554,069 were emergency admissions. The attendance figure was a 4% rise over July 2018 (see above) and was the highest attendance figure since data collection began. Emergency admissions were 4.6% higher than in July 2018[79].

Nigel Edwards, chief executive of the Nuffield Trust, said the number of people waiting more than four hours on trolleys to be admitted "would have once been unthinkable, even in the depths of winter" and that "The soaring temperatures in July have taken their toll on patients and staff, with a record number of people turning up to A&E..."[80]

Green space = cooler towns

Kathryn Brown, Head of Adaptation at the Committee on Climate Change, has advised MPs that green space is effective at reducing the urban heat island effect:

> "There are a few studies we have included in the latest climate change risk assessment that looked at this. One of them, which was in Glasgow, looked at increasing green cover by 20%, which is obviously quite a big amount. The estimates for that suggested it could eliminate 30% to 50% of the expected extra urban heat island effect. It is not a temperature metric but is the increase in the urban heat island by 2050. It was looking at reductions in surface temperature of around 2 degrees."[81]

Professor Mike Davies of UCL's Institute for Environmental Design and Engineering, and a member of the Adaptation Sub-Committee of the Committee on Climate Change, also advised MPs that parks can help reduce urban temperatures at a very local level:

> "There is some empirical evidence of parks locally reducing temperatures… there may be some value in having this [green space] distributed across a city such as London to prevent the full development of the potential maximum of the urban heat island."

Studies point to the role of green space in moderating high temperatures in towns.

In general, green spaces of up to half a hectare (>0.5 ha) can cool local air temperatures. For cooling effect across wider urban areas requires green spaces to be closely spaced as cooling decreases with distance from the green space. For example, modelling has suggested that, in temperate urban areas, greenspaces of 3–5 ha need to be placed about 100–150 m apart[82].

A study in Manchester modelled how greater tree cover can affect the shading, air temperature can reduce the urban heat island (UHI) effect and the effects of wind on commercial buildings. Modelling found a reduction of the maximum hourly air temperature of nearly 1.0°C under peak UHI conditions and reduced wind speed of up to 1.0 m/s[83].

One study found that a large park in London helped lower night-time air temperatures by up to 4°C and that the cooling effect extended to over 400 metres from the green space[84].

Modelling has suggested that to achieve cooling of ~0.7°C across London on warm and calm nights, green spaces of 3 to 5 hectares (ha) would need to be situated ~100–150 m apart. Applying this model to a specific area, a study of the extent of the cooling effect provided by the current extent of green space in the London Borough of Camden was estimated along with an estimate of how much more green space would be needed to provide those cooling benefits to the entire borough[85].

The study found that the existing green space in the borough provides and estimated night time cooling effect of up to half a degree (>0.5°C) for 381 hectares of the rest of the borough area, but that the current amount of green space in the borough is not enough for the whole of the borough and its residents to benefit from the same effect on air temperatures.

To achieve cooling benefits of green space across the whole borough of Camden with green spaces of 3 to 5 ha, it would be necessary to allocate either ~360 ha of land to 120 new 3 ha green spaces (making up 16% of Camden) or ~320 ha of land to 64 new 5 ha green spaces (15%; note that these calculations assume rectangular greenspaces).

There are clearly spatial, logistical and economic barriers to achieving such a tight network in highly urban settings but this modelling can assist in the design and re-design of towns, housing and streets to reduce urban heat and achieve other objectives. The estimate also only includes cooling from green spaces, not other potential effects of having more street trees and 'green infrastructure' such as green roofs and walls.

A study of the urban cooling effects of green and blue spaces in 11 city regions found an average cooling effect of between 0.63 and 0.88 degrees Celsius and an estimated value of this cooling role of £11 billion[86].

Reducing flood risk

More properties in England are at the risk of being flooded by surface water than from rivers or the sea (3 million compared with 2.7 million). With 45 million people out of England's total population of 54 million (83 per cent) live in towns and cities, urban dwellers face considerable risk of that surface water flooding.

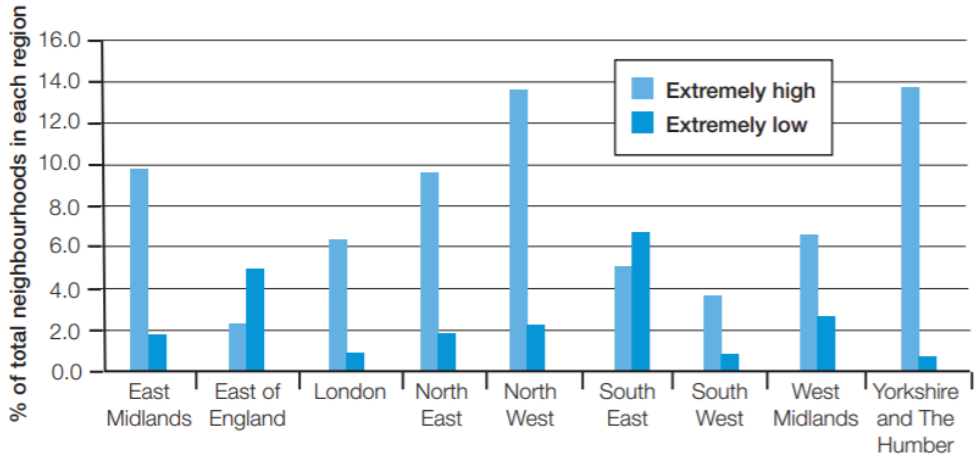
The Joseph Rowntree Foundation's study of climate-related social vulnerability identified social disadvantage in relation to flood risk in England:

> "Patterns of social vulnerability in the context of flood show a strong North–South divide with the North faring the worst. At least 10% of all neighbourhoods in the North West, East Midlands, Yorkshire and The Humber and the North East regions are estimated to be extremely socially flood vulnerable. The South East has the largest proportions of its neighbourhoods estimated to have extremely low socially derived vulnerability for flood compared to other English regions (see Figure 9). Only the South East and East of England regions have a higher proportion of extremely low socially flood-vulnerable compared to

extremely high socially flood-vulnerable neighbourhoods. The South East region has nearly 40% of the total number of extremely low socially flood-vulnerable neighbourhoods and the North West nearly 25% of the total number of extremely high socially flood-vulnerable neighbourhoods in the whole of England. Although London does not show the same marked extremes as in the other English regions, it does have the largest mean socially derived flood mean."[87]

The data underlines the importance of sensitive housing and other development, the need to incorporate sustainable urban drainage into schemes as standard, the use of green and

Figure 9: Proportions of all neighbourhoods in each region estimated to have extremely high or low socio-spatial vulnerability with respect to flood



brown roofing and other ways to retain or divert water, *and* the importance of avoiding the loss of green space and other porous areas (such as front gardens) to hard surfacing.

Moreover, how parks and green spaces are designed and managed can make more of their role in reducing flood risk to nearby homes, business premises and transport services by intercepting, storing and holding back potential flood waters. They can help relieve pressure on drains by reducing the rate and volumes of water entering sewerage systems and limiting the risk of them being overwhelmed during intense rainfall.

Storing carbon

Currently, no reliable and comparable data exists for the specific role of green spaces in absorbing and storing carbon.

The ONS's natural capital accounts currently record carbon storage by woodland, not by green spaces in general. Measuring the likely carbon storage role of trees is easier than estimating the entire contribution of green spaces for their soils, water features, vegetation *and* trees to carbon storage.

Therefore, no comparable data exists for where green space is damaged or in poor condition, such as from eroded or compacted soils, the poor condition habitats, or poor, low grade planting. It is therefore currently unclear both how green space may be adding to carbon emissions, for example by emissions from poor condition soils, and where green space is being prevented from playing a full role in absorbing and storing carbon such as through healthy soils, well-chosen and managed planting of trees and vegetation, and

management of lakes and waterbodies, which often feature in public parks - all of which can absorb and store carbon.

However, some area-specific studies *have* pointed to the kind of values that come with investing in and maintaining parks, green spaces and urban greening in general, for example:

- *Manchester:* the i-trees eco assessment of existing tree cover, much of which is in parks and green spaces, estimates that the area's trees are storing 124,330 tonnes of carbon, sequester 4,980 tonnes of carbon every year, and that if a financial value is placed on the free services provided by the tree stock, including in carbon, this would be worth over £3 million every year[88].
- *Oldham:* a study of carbon stored by the trees sampled is estimated at 66,508 tonnes with an associated economic value estimated at £4,246,000. The estimated annual gross carbon sequestered by the sampled trees is 3,168 tonnes, with a CO_2 equivalent of 11,618 tonnes a year. The value of this is put at £202,25[89].
- *London:* the carbon contained in London's parks has been estimated to an extent by using trees and woodland as a proxy. The financial value of carbon stored in Greater London soils at £10 million per year and the value of carbon contained in trees is put at £8 million per year[90].

Reducing noise

The ONS estimates that the role of vegetation in reducing noise in urban areas led to a saving of over £15 million in avoided loss of quality of life years in 2017, and this is thought to be conservative figure[91].

By acting as a physical buffer to noise, vegetation in parks and green spaces, along busy roads, and in neighbourhoods and streets, can counteract noise-related pollution and disturbance that is a considerable but often over-looked cause of sleep deprivation, stress and other health threats as well as community tension.

The study further estimated the value of the buffering and dampening of noise from urban roads by vegetation in terms of improved amenity and health outcomes. The study identified 167,000 buildings that were benefitting from noise mitigation provided by urban vegetation in the UK. The total annual value of noise mitigation based on the avoided loss of quality adjusted life years (QALY) associated with a loss of sleep, annoyance and adverse health due to noise was £14,431,000.

Cleaner air

The ONS reports the removal or mitigation of some air pollutants by green and blue spaces and natural and semi-natural features saved the nation £1.3 billion in avoided health costs (i.e. from avoided deaths, fewer respiratory and cardiovascular hospital admissions) and amounted to 27,500 years of life saved [92].

That said, because not all air pollutants are the same and not all planting will be of the right kind to mitigate the different pollutants involved, closer study is required to inform the right choice, extent and siting of any planting.

More greenery is good thing for all the reasons set out in this report. Some air quality problems *can* be alleviated by having more and better planting of trees and vegetation,

usually in green spaces but also on streets (e.g. street trees and hedging), and buildings, (e.g. green walls and roofing). But the efficacy of planting should not be overstated because it is easy to generalise about planting and air pollution when it is not at all straightforward.

To be clear, this report does not say that there is no benefit from planting to address poor air quality as the ONS data shows, but as the government's Air Quality Expert Group (AQEG) has stated:

> "...the potential to improve air quality with more and better planting of trees and vegetation using vegetation is modest, an important limitation to mitigation of current Air Quality problems with vegetation is that the most polluted areas of cities are those with very limited space for planting, greatly reducing the potential for mitigation using these methods. An integrated policy which separates people spatially from major pollution sources (especially traffic) as far as possible and in which vegetation is used between the sources and the urban population maximises its beneficial effects."[93]

Carefully researched and well-informed planting, siting, and care and maintenance of vegetation, trees and other planting will all help maximise the potential of the right kind of planting to support air pollution aims, as well as other helping to improve the condition, look, feel and natural value of parks and greens spaces.

There is also no escaping the need to address the root causes and sources of poor air quality rather than rely on planting, which should be done more for the many other reasons mentioned in this and other reports than for being a sticking plaster solution.

Good for nature

Last but not least, green spaces are also important for nature especially as more of England's natural habitats continue to be lost, degraded or mismanaged.

Due to intensive farming practices, pollution, destruction of habitat and creeping urbanisation, which often sees the natural or semi natural habitats wild species need being replaced with insensitively built areas often characterised by swathes of hard surfacing for roads, car parks, and service areas, "Nature continues to be under pressure in England".[94]

Properly managed and in nature-sensitive ways, the parks and green spaces we use can also be havens, not just refuges, for many wild species of plants and animals, including aquatic species in river and water bodies and seasonal migratory species from birds to eels.

Studies show how different types of green spaces (parks, gardens, allotments etc) can be surprisingly rich in wild species even if they are not officially nature reserves. For example, an astonishing 555 different species of insect have been recorded in an "ordinary park in Peckham, south east London" described as "not a nature reserve and has nothing special to warrant it as such" [95].

Although allotments are not covered by the data in this report, which draws on ONS data which excludes allotments, they are proven for their role in local food growing, skills, exercise, community and health. These benefits are often overlooked as is the role of allotments in supporting nature such as their value for bees and other pollinating insects.

A 2019 study of land uses across 360 sites in four British cities (Bristol, Edinburgh, Leeds and Reading) found "that residential gardens and allotments (community gardens) are

pollinator ‘hotspots’: gardens due to their extensive area, and allotments due to their high pollinator diversity and leverage on city-scale plant–pollinator community robustness.”[96]

Section 3: The decline of green space quality and quantity

Many areas of England are blessed with decent green space and parks consistent with its 'green and pleasant land' image but, as this report shows, the general decline in quality provision and investment, and consequences this has for people's health and wellbeing and opportunities, cannot be denied.

Other reports have warned about the loss and decline of green spaces, parks, and nature areas. To us, given the evidence set out in this report, that ongoing decline goes against Benjamin Franklin's "an ounce of prevention is worth a pound of cure" axiom, which government guidance on the sound use of health budgets appears to back:

> "Evidence shows that prevention and early intervention are effective in improving or maintaining health and represent good value for money. Not only do well-chosen interventions implemented at a scale help to avoid poor health and reduce the growth in demand on the NHS, they can also reduce pressure on other public services and support economic growth."[97]

In this section we look at several factors which combine to affect the amount and quality of green space available to communities which, in turn, also undermine the government's ability to deploy green spaces in smarter strategies for health, community cohesion, land use, environmental aims and more.

Green space standards

As shown in this and other reports, inequalities of green space access are marked and it is clear that different parts of England, and even neighbouring areas in the same vicinity, provide different quantities and qualities of space. That results in many people lacking adequate access to quality green and open space meaning they also lose out on the variety of health and other benefits others routinely enjoy.

Since 1997, Green Flag Award® has recognised well managed parks and green spaces and set quality standards for the management of recreational outdoor spaces[98].

Any green space or accessible park can be entered for an award. Winning spaces can hoist their Green Flag and many will be seen in local authority-run public parks although formal gardens, nature reserves, woodlands, allotments, churchyards, hospital grounds and university campuses are also eligible. The scheme seeks to:

- ensure that everybody has access to quality green and other open spaces, irrespective of where they live.
- ensure that these spaces are appropriately managed and meet the needs of the communities that they serve.
- establish standards of good management.
- promote and share good practice amongst the green space sector.
- recognise and reward the hard work of managers, staff and volunteers.

Awards are assessed on eight criteria: A welcoming place; Healthy, safe and secure; Clean and well maintained; Conservation and heritage; Community involvement; Marketing; Management; and, Sustainability.

Keep Britain Tidy administers the scheme in England on behalf of the Ministry of Housing, Communities & Local Government and says that "Winning a Green Flag Award® visibly demonstrates to the local community that a clear improvement has been made to a site."

Notwithstanding the government's support for green and open spaces in its planning policies on paper (see Appendix) too many existing spaces on the ground remain under threat from the thrust of the planning system in favour of more development, often of questionable merit, quality and need.

The National Planning Policy Framework (NPPF paragraph 97) also provides a get out clause for local planning authorities and developers to remove green spaces regarded as "surplus to requirements", if an assessment of existing green space or sports and recreational provision shows that their present use is outweighed by other considerations.

Without national standards for the quality and quantity of green and open space, provision depends on whether local planning authorities set - and landowners and developers follow - good polices, and observe good practice and advisory guidance such as Natural England's archived *Accessible Natural Green Space Standards*[99].

As mentioned earlier in this report (see heatwaves), and noted by Public Health England's July 2020 *Improving access to greenspace* report, urban greenspace is in decline:

> "...the Committee on Climate Change found that the total proportion of urban greenspace in England declined by 8 percentage points between 2001 and 2018, from 63% to 55%."[100]

When MPs looked at green space in the context of the rising incidence of health-threatening heatwaves they recommended that planning policy for England should include green infrastructure targets for town and cities:

> "The Government should introduce an urban green infrastructure target in the National Planning Policy Framework to ensure towns and cities are adapted to more frequent heatwaves in the future."[101]

> "Green spaces have been proven to reduce the urban heat island effect, however urban green space has declined in England. The Government's commitments to green towns and cities are not measurable or target driven and do not link green spaces to urban heat island reduction. The Government should introduce an urban green infrastructure target as part of the metrics for the 25 Year Environment Plan and in the National Planning Policy Framework to ensure towns and cities are adapted to more frequent heatwaves in the future. The Government should aim to increase urban green space to 2001 levels, and higher if possible. The importance of shaded spaces in urban areas should be included in the Framework's section on 'promoting healthy and safe communities', so that all local planning authorities have to demonstrate their provision of shaded spaces in the clearance process of their local plans. (Paragraph 91)" [102]

The effect of funding cuts

Diminishing funds and budget cuts have been affecting the quality of green space and raising pressures to sell off green space in areas where provision is limited. Between 2016-17 and 2018-19, local councils made over £15million of cuts to budgets to maintain and improve parks and open spaces[103].

Public Health England states that:

> "Reduced local government budgets are of course one reason investment in green infrastructure is under pressure. But it is also because greenspace has traditionally been viewed as a liability, with the social, economic, health and environmental contributions to society rarely being acknowledged. Local areas need first to recognise and understand the wide range of benefits people accrue from green infrastructure, and then be able to capture and demonstrate their value so that they are not overlooked or forgotten when difficult local finance decisions must be made."[104]

Traditionally, councils have run and managed parks and open spaces, but unlike provision of waste collections and other services, there is no statutory requirement for local authorities to provide parks and green and open spaces.

Combined with falling budgets and no ring-fenced funding, the result has been rising pressure on park and green spaces such as from reduced maintenance and management, contracting out of services, and even giving in to pressures to sell land for development to recoup funds to fill budget gaps, especially to fund statutory services, which parks are not.

The effect of cuts is not new as parks and green spaces have faced a general decline in funds and quality for several decades with many urban parks experiencing a decline in quality toward the end of the 20th century.

As far back as 2001, a public parks assessment by the Urban Parks Forum identified local authority budget cuts as the main reason for decline and estimated cumulative under-investment of £1.3 billion between 1979/80 and 1999/2000 leading to the loss of cafes, toilets and other facilities, reduced management by dedicated park keepers and a trend toward low quality amenity grass and other easy to manage landscapes. Responding to the Forum's survey, only 18 per cent of local authorities reported that their parks were in good condition while the quality of 39 per cent of local authority managed open spaces had deteriorated.

In 2002, the government-commissioned Urban Green Spaces Taskforce reported that poor-quality parks and green spaces had left many communities with depressing, poorly used, inaccessible and often dangerous spaces - characteristics of urban decline[105]. The declining quality of green spaces was also reported in 2002 by MPs who noted that:

> "Following the report of the Urban Green Spaces Taskforce in 1999, the Government acknowledged that in general the quality of green space had declined in recent years. The Government committed to a vision of a network of quality green spaces for all communities and a programme of work to bring about improvements.... In 2002 the Urban Green Spaces Taskforce reported that under-investment in green space was a key factor in the decline in the infrastructure and condition of parks and green spaces in many areas."[106]

Noting that "In one in six urban local authorities the quality of green space is declining" the MPs recommended that the government should particularly focus on those with high levels of social deprivation.

The Policy Exchange think tank reported in 2013 on the importance parks for public health and well-being, bearing out the evidence in this and other reports. Again in 2014, Policy Exchange reported on how better use of data could help improve spaces and how new funding sources the development of park improvement districts, green prescribing and endowment funds could support green spaces[107].

The funding crisis facing parks and green spaces came to the fore in 2014 when the Heritage Lottery Fund (HLF) declared that "Parks are under direct threat" with consequences for the public health and other roles played by green spaces for communities and for nature.

State of UK Public Parks 2014: Renaissance to risk?[108] was the HLF's first comprehensive study of the condition and management of the UK's public parks and it concluded that without proper funding "parks are at serious risk of rapid decline and even being sold off and lost to the public forever".

The report also identified that deteriorating conditions, standards and potential threats to parks and green space because:

- 86% of parks managers reported budget cuts since 2010, a trend they expect to continue, meaning reduced management and security of parks.
- 45% of local authorities are considering either selling parks and green spaces or transferring their management to others, and that this may result in the loss of parks and other green spaces, the management of parks being split between organisations, community groups having to fill gaps in services.
- 81% of council parks departments have lost skilled management staff since 2010 and 77% have lost front-line staff.

The HLF's follow up in 2016 reported that:

> "Without urgent action the continuing downward trend in the condition of many of our most treasured parks and green spaces is set to continue."[109]

Fields in Trust's 2015 research[110] also found public concern at declining quality and potential loss of cherished green spaces:

- One in five people (16%) reporting that their local park or green space has been under threat of being lost or built on.
- Two thirds (69%) saying that the loss of parks would be detrimental to children's development and half of respondents admitted that they would be less active if their local green space was lost.
- Nearly all people (95%) agreeing that parks and play areas should be protected from development.
- Almost half of people reinforcing the evidence of green space benefits in saying that use of their local park aids their health (48%) with 70% of 16-24 year olds also feel less stressed from their access to green space.

A 2017 inquiry by MP's into the predicament facing public parks reported that:

> "...parks are at a tipping point and face a period of decline with potentially severe consequences unless their vital contribution to areas such as public health, community integration and climate change mitigation is recognised."[111]

Against the backdrop of reduced funding since 2016 the government has funded 352 'pocket parks', defined as being approximately from the size of 1 tennis court to the size of 16, between 0.02 to 0.32 hectares.

On 3 March 2020 the government launched a third round of pocket parks. The latest funding of £1.35 million is to create 19 new urban pocket parks and revive 49 run-down

urban spaces for their transformation into “thriving ‘pocket parks’ and green spaces to increase biodiversity, encourage community integration and tackle loneliness.”[112]

The state of urban nature

The condition of nature in parks, green and blue spaces and nature reserves and how they are funded and managed matters because, if they are not functioning well as havens for nature not only are they not providing the ecological services they should, especially when compared with streets and town centres, but they will not be especially useful as places for people to reap the rewards of spending more time in nature whether for leisure, relaxation, learning or formal education.

The Office for National Statistics (ONS) has reported on the ongoing poor condition of many of England’s treasured Sites of Special Scientific Interest (SSSI) in urban areas. The ONS finds that over half of urban area SSSI’s (53%) are in unfavourable condition and that there has been little improvement over time:

> "...the extent of SSSIs in England’s urban areas was 9,685 hectares, which is a slight increase to that observed in May 2018 (9,590 hectares). When looking at the condition of the SSSI sites, 45% were considered in favourable condition, whereas over half of these sites were registered as in an unfavourable condition. Again, the extent and condition of site have not changed much from those observed in May 2018. When comparing this to all SSSIs in England, this is not much different, with 51% of sites registered as unfavourable.”[113][114]

SSSI’s are only one indicator of nature’s condition but they matter for their role in supporting a host of wild species and because they are supposed to be protected in law.

Other indicators for nature in urban areas, such as birds and mammals being in decline, do not paint an especially rosy picture of the nature on our doorsteps being in good condition.

The nature of new development

Insensitive development and badly designed, planned and delivered housing are a driver of England’s once distinctive and nature-rich landscapes becoming ‘blandscapes’ which are increasingly inhospitable to nature. So much so that the nation’s wildlife is officially in long term decline[115].

How new housing and other building schemes treat land, existing wild species and habitats, and provide new green space falls far below what is needed if the housing and development sectors are to play their full part in the recovery of nature and ecosystems in England.

Some better developers have raised their game, for example by retaining existing green spaces and natural features in their schemes and making quality nature features and green spaces central to their plans, rather than an afterthought or fringe feature.

Good developers are few and far between and the majority prefer a clear site, stripped of features which would impede works on site and would, if retained, prevent maximum space for housing, parking and identikit gardens of grass, patios, fencing and low value planting that provide so little value to nature. Low grade communal play space and areas of amenity grass and hedging may be added, if those do not eat too much into profits.

Some ways for how housing developments could be better for green space and residents have been proposed by Kate Swade of the Shared Assets consultancy[116]:

> "The role of developers in providing solutions (to this) is an interesting one. The short termism of the system in which they operate means that, with a few exceptions, they have little interest in medium and long term green space management.
>
> "One thing developers could do is leave more "undone" – leave spaces for the community to grow into, and to decide what it wants to do with. The urge to fill every gap with a privet hedge is understandable from a presentation point of view (we're done! this is finished!), but quickly becomes a long-term management burden with little social, economic or environmental value.
>
> "What if they were to hold back some of the money they would spend on landscaping and planting into a pot for spending at a later date?"

As the government pushes more reform of land use planning in England, further easing the way for house builders and the development sector to get their schemes approved and built, how they operate and whether they are contributing to or detracting from action to restore nature, curb climate change and support health public scrutiny may increase.

Will developers continue to argue against the retention of existing nature on sites and put in green space of low nature value, as an afterthought on already packed sites? Or will the sector provide proper access to quality green space, fully support retention of existing natural features, and ensure that any new natural / semi-natural features are ecologically coherent?

Funding and solutions

Reflecting on the evidence of how green space and parks support so many social 'goods', and on public desire for more use of green and open spaces during the C-19 lockdown, some have already proposed ways to rethink how green spaces and parks are funded and their benefits secured.

The National Trust, Sustrans, Create Streets and the Heritage Lottery Fund (HLF) joined with others including the Mayors of the west Midlands, Andy Street, and Bristol's Marvin Rees, to recommend that the government should invest £5.5 billion to boost public access to green spaces, especially in areas lacking proper provision [117]. The grouping proposed:

- *The greening of urban streets and neighbourhoods* to create street parks and link up local green spaces to provide seamless, safe green and blue routes for waling and cycling for all, including for everyday trips to work, school and for leisure.
- *Upgrading sub-standard parks and green spaces* to be fit for purpose in the 21st century with the quality natural habitats, walking and cycling routes, and facilities for communities to significantly gain via play, sport and recreation.
- *Creation of large regional parks and forests on urban fringes,* to make the most of existing green belt, linking town with countryside, and providing millions of people with access to green and wild spaces without needing to use a car.

The grouping assessed that these activities would result in some £200 billion in health and social benefits, in keeping with the substantial evidence highlighted in this and other report on the advantages of routine contact with nature, green and open spaces whether for recreation and exercise, leisure and learning, or more.

The Social Market Foundation has also reflected on C-19 and the funding squeeze and has suggested ways to secure funding for parks[118]:

- *Park Districts:* where homeowners with properties near parks pay a small sum in support of local authority parks as occurs in some US cities.
- *Transferring control to non-profits:* many communities have stepped up to care for and watch out for their local green spaces and parks, and although this voluntary contribution makes a difference, whether it can fully fill gaps if and when local councils reduce their role is debatable, but formal charitable foundations may be well placed to provide urban green spaces and SMF cite the way Newcastle City Council has done this.
- *Involving business:* SMF point to how taxpayer funds have provided a financial lifeline for many businesses during the C-19 pandemic and suggest that businesses can return the favour by investing locally in shared green spaces post-pandemic.
- *A new role for the NHS:* many studies, some of the recounted in this report, show how use of parks and green spaces underpins health. SMF suggest that 'green prescribing' can save on health costs and that NHS England could play a more active role in provision of urban green space.

Since 2012, Nesta has also examined new ways to fund and manage green spaces[119].

Section 4: A new analysis of green space deprivation

There is already good work published by other organisations on green space provision some of which features in this report. For example:

- Fields in Trust's *Green Space Index* identifies how much public green space (parks, etc.) is available across the country, including at a small neighborhood level[120], and its accessibility based on a 10-minute walk[121].
- The Design Council has built upon work ten years ago by CABE which identified the relationship between green space deprivation and ethnicity[122], by carrying out in-depth research in six deprived and ethnically diverse areas to study how residents viewed the importance of green space within their areas, how the green space is used, and the conditions needed to improve use [123].
- Office for National Statistics (ONS) maps and datasets on public green space at a small neighbourhood level and on garden space at a larger neighbourhood level [124].
- The Marmot Review called for improving the availability of good quality open and green space, including noting how the roads budget at the time could instead be used to create 1,000 new parks across the country[125] (the roads budget has increased substantially since 2010 while spending on parks has decreased over several decades).
- Public Health England's *Improving Access to Greenspace* and its 2020 update [126].

The data analysis

This analysis builds on this work in the following ways:

- We bring together ONS data on garden space, public green space and access land (heathland, mountains, commons, etc.) to enable identification of those neighbourhoods (average population size of 7,200) which not only lack public green space (including access land) but which also lack garden space[127]. We believe this is a robust methodology for identifying the neighbourhoods most deprived of green space. By using this approach only neighbourhoods with little or no public green space and little garden space will be identified as deprived, whereas neighbourhoods with little or no public green space but on average very large gardens will not.
- We use a 5-minute walk measure of accessibility rather than a 10-minute walk. This is based on the current Natural England Standard[128] that people should be within a 5-minute walk of 2 hectares of green space[129]. Some people will travel further, for example to take part in sports at playing fields. In general, though, research suggests "a distance of approximately 5-6 minutes foot walk from home to be a threshold beyond which the frequency of greenspace use sharply declines."[130]
- The Green Space Deprivation Rating (see diagrams) we have developed is based on:
    - Scoring - the proportion of people within a neighbourhood who are within 5 minutes of 2 hectares of public green space, the average amount of garden space per capita within the neighbourhood, and the quantity of green space per capita (including Access Land)[131].
    - Assigning neighbourhoods to A-E rating – the A rating has most green space and rating E has least green space. This assignment is necessarily subjective because the value people on the type of green space will differ. For example, some people may prefer a small garden to work on more than they do a larger public green space nearby, whereas others may enjoy the larger space for games or exercise.

- We have analysed the Green Space Deprivation Rating to understand the relationship between green space and income, and green space and ethnicity.
- We graphically identify the neighbourhoods and rating, as well as provide data on the number and proportion of neighbourhoods within a local authority area that are most deprived of green space (Rating E).

Green space scoring

We scored each neighbourhood (MSOA) according to three factors.

Garden space
- 1 = lowest quartile (very small)
- 2 = second lowest (small)
- 3 = second highest (large)
- 4 = highest quartile (very large)

Total public green space:
- 1 = <9m2 (very small)
- 2 = >9m2 but < 33m2 (small)
- 3 = >33m2 but < 50m2 (large)
- 4 = >50m2[3] (very large)

Proportion of population within 5 minutes from 2 hectares of public green space
- 1 = < 25%
- 2 = 25% to 50%
- 3 = 50% to 75%
- 4 = > 75%

RATING E (Least green space)
Very small gardens and very small amount of public green space

Very small gardens and small amount of public green space more than 5 minutes' walk for 75% or more of residents

Small gardens with very small amounts of green space more than 5 minutes' walk away for 75% or more of residents

RATING D
Very small garden and large or very large amounts of green space within 5 minutes' walk, although more than 5 minutes' walk away for 75% or more of residents

Very small garden with small amount of green space less than 5 minutes' walk for up to 75% of residents

Small garden with very small amounts of public space less than 5 minutes' walk for up to 75% of residents

Small garden with small amount of public green space more than 5 minutes' walk for 75% or more of residents

RATING C
Small garden and large or very large amounts of public green space more than 5 minutes' walk for 75% or more of residents

Small garden and small amounts of green space less than 5 minutes' walk for up to 75% of residents

Large or very large garden and very small or small amount of public green space more than 5 minutes' walk for 75% or more of residents

RATING B
Very small or small garden but large or very large amounts of public green spaoe less than 5 minutes' walk for up to 75% of residents

Large gardens and a small amount of public green space less than 5 minutes' walk for up to 75% of residents

RATING A (Most green space)

Large or very large gardens and large or very large amounts of public green space

Weaknesses

Our analysis is not without weaknesses. For example:

- The ONS choice of what is and is not public green space, which we have also used, errs on the side of caution and does not capture all green spaces for which there may be public access. For example, it excludes allotments, some of which have public access while others do not. The dataset does not include wildlife sites owned or run by The Wildlife Trusts or others, some of which may be freely open to the public. Nor does the ONS dataset include public footpaths to open countryside, and beaches, which are not 'green' spaces but are important open spaces.
- The data does not capture the quality of the green space. This is a major issue for people and for wildlife. For example, if green spaces are perceived as unsafe, they will not be used and if they are maintained as short grass they will bring limited benefits for nature.
- The data does not capture green infrastructure such as street trees, planters, green roofs and parklets all of which enhance the quality of an area and can provide important corridors for nature.
- The data does not capture the extent to which communities engage and shape how local green spaces are managed, maintained and enhanced. As covered in this report, the benefits of green space go beyond availability to how people engage with it alone or with others, and how it supports aims such as carbon storage.
- The rating system we use is necessarily subjective and alternative approaches are possible. We are making the full data set available for others to use and would welcome others to use it to test alternative analytical approaches.

Use of the analysis

Allowing for unavoidable weaknesses of our analysis, and any analysis of green space based on currently available data, the findings have significant utility. For example:

- For the government to identify which local authorities most need proper finance and powers because of their high proportion of neighbourhoods most deprived of green space (particularly ratings D and E).
- For local councils and citizens groups to support the targeting of practical projects and campaigning.
- To support the work of the National Academy for Social Prescribing, Natural England and others in their work on green space, public health and other beneficial aims.
- To build upon and support the work of others in the Environmental Justice field working to demonstrate the strong correlation between poverty, deprivation, ethnicity and environmental degradation, to persuade policy makers to address these issues, which are a gift to our leaders.

Section 5: Results of analysis

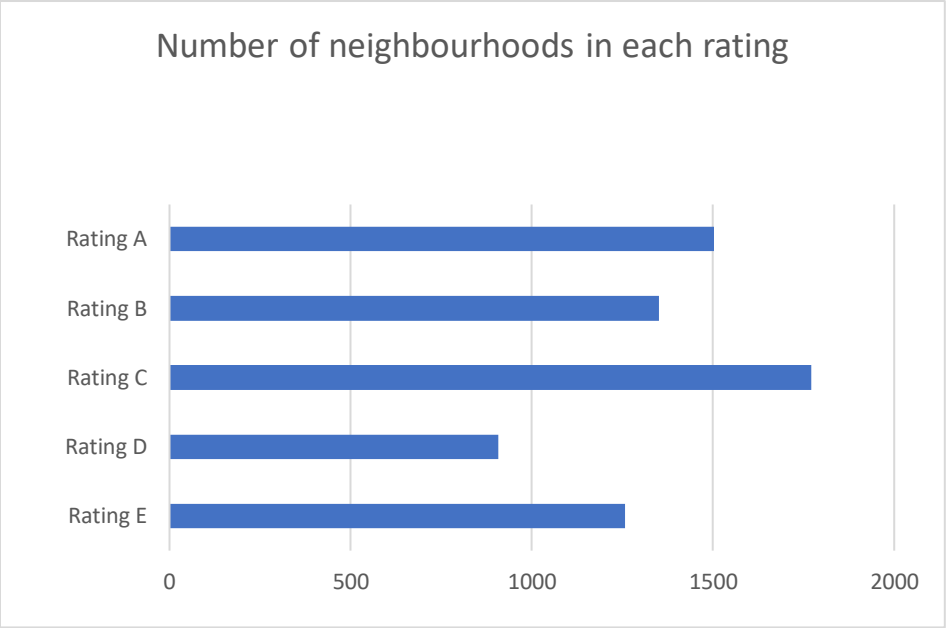
1,257 neighborhoods in England are rated E.

E rated neighbourhoods are the areas most deprived of green space.

10.9 million people live within these neighbourhoods, which is roughly 1 in 5 of the population of England.

In addition, 907 neighbourhoods are rated D, which still represents very poor green space provision.

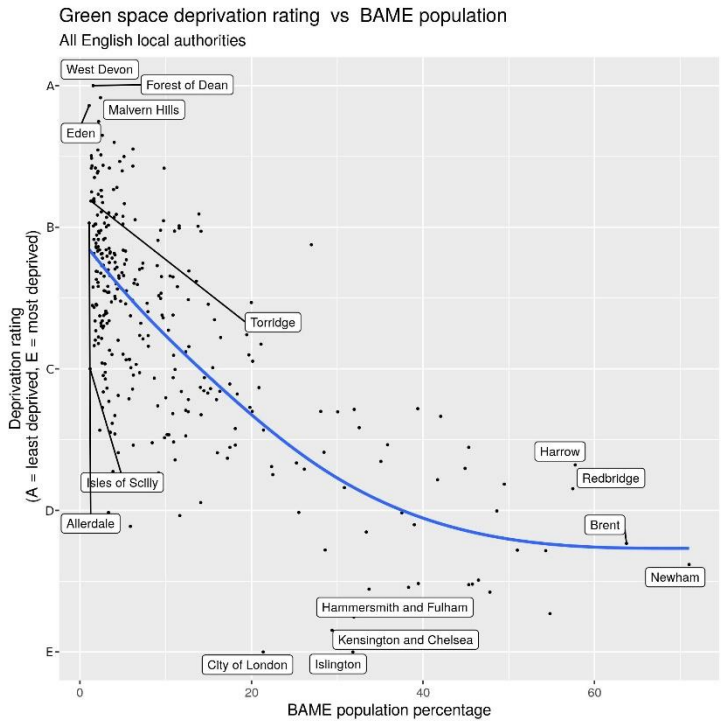
E and D areas should be prioritised for increasing the quantity of green space, while ensuring green space elsewhere is of quality and that other green infrastructure is in place.

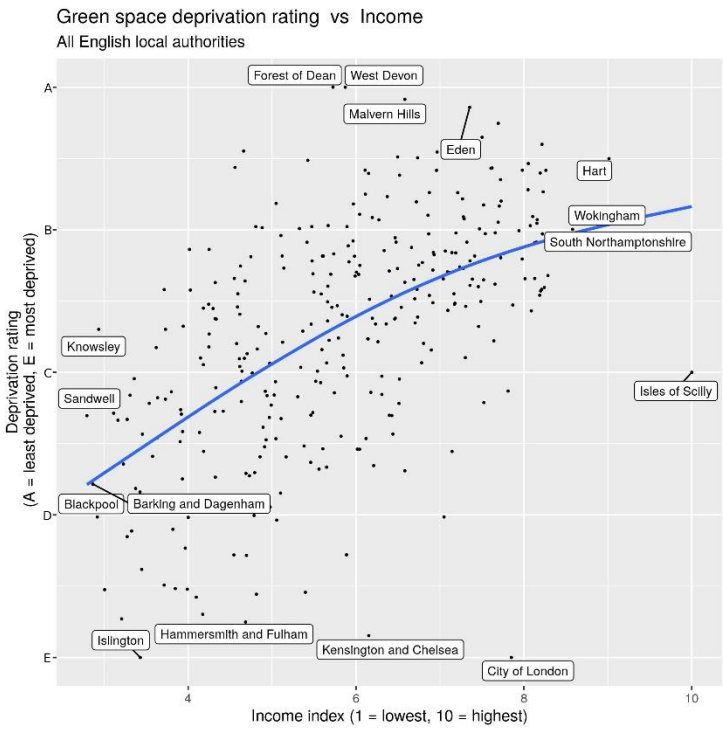


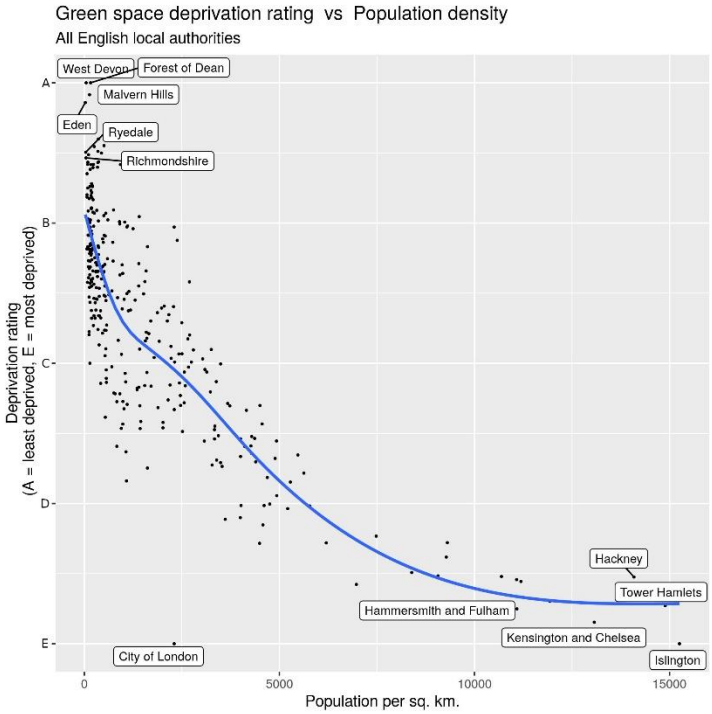
As with the CABE analysis ten years ago, we find a strong correlation between green space deprivation and ethnicity. 42% of BAME people live in neighbourhoods rated E. If you are a Black or Minority Ethnic person you are more than twice as likely to live in a neighbourhood rated as E (the most greenspace deprived) as a white person is. The graph below shows that local authority areas with a mostly White population have much more green space that those local authority areas with a large BAME population.

There is also a correlation between income and green space rating, although it is not as strong as for ethnicity. Average incomes in neighbourhoods rated E are low, but in approximately a fifth of these neighbourhoods the average income is higher than the average income in England (i.e. they not all are poor areas). The lack of green space in some wealthy areas of London, such as Kensington and Chelsea, is an example of this.

There is also, perhaps not surprisingly, a strong relationship between green space deprivation and population density. Not that green space provision and population density are not compatible, they are. Areas of population density can have ample green space but currently space is used instead for cars (roads, on street car parking, car parks) despite the areas most deprived of green space having lower levels of car ownership.







Further analysis has also been carried on the relationship between ethnicity and the quantity of public green space, ethnicity and accessibility to green space[132], and ethnicity and garden space. Similarly, the analysis has been carried out between income and these three factors (quantity of public green space, accessibility, and garden space).

Graphs of all of these are available in the Appendix. The same correlations as seen above exist for garden space and public green space but not for access to green space. Areas with a higher proportion of BAME residents or low average income have a greater proportion of their population within 5 minutes-walk of public green space than wealthier areas or areas with a higher proportion of white people. This is at least in part due to the higher density populations in these areas and the historical recognition of the need for parks in densely populated areas.

We have also looked at the correlation between the political control of councils and green space deprivation. We have done this in two ways:

- First, we looked at the political control of the local authority areas with the greatest number of the neighbourhoods that are rated E. Inescapably, most are under the control of the Labour Party. Of the 50 local authority areas with most rated E neighbourhoods 40 are Labour Party controlled, 6 are Conservative Party controlled, and in the remaining 3 councils there is no overall control (in 1 Labour is the largest party, 1 the Green Party is the largest, and the Conservatives the largest in the remaining).
- Secondly, we have looked at all the neighbourhoods rated E and identified which political party is in control of the council. This shows that two-thirds of neighbourhoods rated E are in Labour Party council areas with a fifth in Conservative Party councils.

Correlation being different from causation, it would be incorrect to suggest that the majority of neighbourhoods being rated E being within Labour council areas means that it is their fault; instead it is the result of decades of neglect by national and local politicians of all political persuasions. But it does suggest that the government will get the full support of the

main opposition party if it honours its commitment to ensure that everyone can access both the quantity and the quality of parks and green spaces needed for people's physical and mental health, whereas if the government fails to do so it will face significant and sustained political pressure from Labour and others.

Below is a list of local authority areas identifying the number of neighbourhoods in each rating. The list is ordered by the numbers of E rated neighbourhoods.

Local authority	Number of neighbourhoods	Number of neighbourhoods by rating				
		A	B	C	D	E
Birmingham	132	7	36	33	28	28
Lambeth	35	0	2	0	5	28
Tower Hamlets	32	0	2	0	2	28
Haringey	36	0	5	0	4	27
Manchester	57	0	6	7	19	25
Liverpool	61	5	13	8	12	23
Newham	37	0	5	0	9	23
Southwark	33	0	3	1	6	23
Islington	23	0	0	0	0	23
Leeds	107	16	23	26	20	22
Lewisham	36	0	3	0	11	22
Wandsworth	37	0	5	0	11	21
Camden	28	0	3	0	4	21
Hammersmith and Fulham	25	0	1	0	3	21
Brent	34	0	7	1	6	20
Waltham Forest	28	0	1	3	4	20
Westminster	24	0	4	0	1	19
Bradford	61	10	6	14	13	18
Bristol	55	3	13	10	11	18
Hackney	28	0	3	0	7	18
Kensington and Chelsea	21	0	0	0	3	18
Enfield	36	2	4	2	12	16
Leicester	37	3	6	5	7	16
Croydon	44	4	6	9	10	15
Greenwich	33	1	6	4	7	15
Ealing	39	0	2	1	22	14
Kingston upon Hull	32	0	4	4	10	14
Southampton	32	0	8	1	9	14
Hounslow	28	0	7	0	7	14
Brighton and Hove	33	4	8	3	4	14
Redbridge	31	1	6	3	8	13
Coventry	42	2	5	11	12	12

Nottingham	38	2	8	9	7	12
Portsmouth	25	0	6	1	6	12
Sunderland	36	5	3	11	5	12
Bolton	35	4	7	8	4	12
Sheffield	70	10	14	15	20	11
Barnet	41	4	7	6	13	11
Oldham	33	4	3	6	9	11
Medway	38	4	7	8	8	11
Wigan	40	5	12	6	6	11
Plymouth	32	1	6	5	10	10
Harrow	30	2	5	5	8	10
Blackpool	19	0	2	5	2	10
Blackburn with Darwen	18	2	3	2	1	10
Kingston upon Thames	20	0	4	2	5	9
Swindon	27	3	4	7	4	9
Kirklees	59	7	6	29	9	8
Merton	25	1	7	1	8	8
Salford	30	1	7	8	6	8
Sefton	38	6	11	9	4	8
North East Lincolnshire	23	2	5	6	2	8
South Tyneside	23	1	8	4	2	8
Dudley	43	1	15	12	8	7
Barking and Dagenham	22	0	7	0	8	7
Sutton	24	2	6	3	6	7
Buckinghamshire	67	25	10	20	5	7
Slough	14	0	1	1	5	7
Reading	18	2	2	5	2	7
Bournemouth, Christchurch and Poole	48	8	13	12	9	6
Bexley	28	1	4	9	8	6
Wolverhampton	33	0	9	12	6	6
Wirral	42	11	13	7	5	6
Wiltshire	62	28	12	14	2	6
Rochdale	25	3	8	6	2	6
Norwich	14	1	1	4	2	6
Derby	31	2	16	6	1	6
Sandwell	38	1	8	13	11	5
County Durham	66	12	11	31	7	5
Bury	26	1	7	8	5	5
Northampton	31	3	9	10	4	5
Havering	30	6	7	8	4	5

Peterborough	22	5	3	6	3	5
Southend-on-Sea	17	0	5	4	3	5
Gravesham	13	3	1	1	3	5
Calderdale	27	8	4	8	2	5
Darlington	15	2	1	5	2	5
Worthing	13	2	2	2	2	5
North Tyneside	30	2	8	6	10	4
Walsall	39	7	11	10	7	4
Luton	21	0	5	5	7	4
South Gloucestershire	32	7	4	11	6	4
Richmond upon Thames	23	1	8	4	6	4
Milton Keynes	32	8	12	2	6	4
North Somerset	26	5	2	10	5	4
Cambridge	13	1	2	1	5	4
Gateshead	27	4	6	9	4	4
York	24	3	3	11	3	4
Northumberland	40	19	6	8	3	4
Preston	17	2	4	4	3	4
Bedford	20	6	4	3	3	4
Hartlepool	12	1	3	1	3	4
Stockton-on-Tees	24	4	5	9	2	4
Thanet	17	2	4	5	2	4
Basildon	22	4	7	6	1	4
Dartford	13	3	2	3	1	4
Ipswich	16	1	8	3	0	4
Hillingdon	32	3	6	8	12	3
Tameside	30	2	5	11	9	3
Oxford	18	1	1	4	9	3
Bromley	39	7	13	12	4	3
Canterbury	19	6	4	2	4	3
Cheshire West and Chester	47	10	6	25	3	3
Wakefield	45	12	16	11	3	3
Thurrock	19	2	2	9	3	3
Middlesbrough	19	2	4	7	3	3
Welwyn Hatfield	16	4	0	6	3	3
Exeter	15	3	2	4	3	3
Halton	16	4	3	3	3	3
Stevenage	12	0	3	3	3	3
East Riding of Yorkshire	43	15	6	17	2	3
Lancaster	18	6	4	3	2	3

Eastbourne	13	3	2	3	2	3
Central Bedfordshire	33	10	3	16	1	3
Solihull	29	4	11	10	1	3
Arun	19	2	4	9	1	3
Stoke-on-Trent	34	4	19	7	1	3
Havant	17	0	7	6	1	3
Redditch	13	3	3	3	1	3
Hastings	11	2	2	3	1	3
Hyndburn	9	1	2	2	1	3
Cornwall	73	37	6	27	0	3
Newcastle upon Tyne	29	1	8	11	7	2
Stockport	42	7	15	12	6	2
Basingstoke and Deane	22	8	2	6	4	2
Rushmoor	12	1	3	2	4	2
Gosport	10	0	3	1	4	2
Doncaster	39	8	12	14	3	2
Braintree	18	5	4	4	3	2
Pendle	13	3	1	4	3	2
Burnley	12	2	2	3	3	2
Colchester	20	4	4	8	2	2
Erewash	15	1	4	6	2	2
Watford	12	1	1	6	2	2
Chelmsford	21	5	7	5	2	2
Gloucester	15	0	6	5	2	2
Worcester	14	0	6	4	2	2
Corby	8	1	1	2	2	2
Bath and North East Somerset	27	4	11	9	1	2
East Suffolk	30	14	4	9	1	2
Harrogate	21	7	3	8	1	2
Maidstone	19	6	3	7	1	2
Folkestone and Hythe	14	5	1	5	1	2
Lincoln	11	2	3	3	1	2
Broxbourne	13	1	7	2	1	2
Charnwood	22	4	9	7	0	2
New Forest	23	12	2	7	0	2
Kettering	11	1	1	7	0	2
Telford and Wrekin	23	7	8	6	0	2
North Hertfordshire	15	4	4	5	0	2
Test Valley	15	6	4	3	0	2
Barrow-in-Furness	10	0	6	2	0	2

Lewes	13	4	5	2	0	2
South Lakeland	14	11	0	1	0	2
Trafford	28	0	6	13	8	1
Cheshire East	51	13	13	20	4	1
Crawley	13	0	2	6	4	1
Great Yarmouth	13	2	1	5	4	1
Nuneaton and Bedworth	17	0	4	9	3	1
Warrington	25	6	8	7	3	1
Torbay	17	2	5	6	3	1
South Ribble	17	4	3	6	3	1
West Suffolk	21	10	1	6	3	1
Dacorum	22	4	9	5	3	1
East Staffordshire	15	4	4	3	3	1
Guildford	18	10	2	2	3	1
Swale	17	2	2	10	2	1
Redcar and Cleveland	19	3	6	7	2	1
Barnsley	30	10	11	6	2	1
Cheltenham	15	1	5	6	2	1
King's Lynn and West Norfolk	19	9	1	6	2	1
Somerset West and Taunton	19	7	4	5	2	1
Bracknell Forest	15	4	4	4	2	1
Woking	12	3	2	4	2	1
Castle Point	12	4	1	4	2	1
Cannock Chase	13	8	1	1	2	1
Adur	8	4	0	1	2	1
Tendring	18	4	1	11	1	1
St. Helens	23	2	9	10	1	1
South Somerset	24	10	3	9	1	1
Huntingdonshire	22	8	4	8	1	1
Ashfield	16	3	3	8	1	1
Epping Forest	17	6	1	8	1	1
North Lincolnshire	23	8	6	7	1	1
Dorset	47	29	10	6	1	1
East Hertfordshire	18	6	4	6	1	1
Wyre	14	2	5	5	1	1
Breckland	17	8	2	5	1	1
Ashford	14	7	0	5	1	1
South Kesteven	16	5	5	4	1	1
Fareham	14	3	5	4	1	1
Sedgemoor	14	6	2	4	1	1

Tunbridge Wells	14	6	2	4	1	1
Teignbridge	19	12	1	4	1	1
Elmbridge	18	7	6	3	1	1
Scarborough	14	5	4	3	1	1
Tamworth	10	1	4	3	1	1
Stafford	16	9	2	3	1	1
Rother	11	4	2	3	1	1
Chorley	14	7	3	2	1	1
West Lindsey	11	7	0	2	1	1
South Cambridgeshire	20	7	1	11	0	1
West Lancashire	15	2	5	7	0	1
Bromsgrove	14	5	1	7	0	1
Lichfield	12	3	2	6	0	1
St Albans	20	9	5	5	0	1
East Devon	20	12	2	5	0	1
Carlisle	13	5	2	5	0	1
Chesterfield	13	3	5	4	0	1
South Oxfordshire	20	11	4	4	0	1
Fylde	9	0	4	4	0	1
Mid Suffolk	12	7	0	4	0	1
South Northamptonshire	11	6	0	4	0	1
Broxtowe	14	2	8	3	0	1
Dover	14	6	4	3	0	1
Copeland	8	4	0	3	0	1
Three Rivers	12	5	4	2	0	1
High Peak	11	7	1	2	0	1
City of London	1	0	0	0	0	1
Harlow	11	0	6	0	5	0
Spelthorne	13	1	4	5	3	0
Gedling	15	4	5	3	3	0
Windsor and Maidenhead	18	10	2	3	3	0
Wellingborough	10	4	1	2	3	0
Rotherham	33	5	12	14	2	0
Shropshire	39	19	7	11	2	0
Knowsley	20	1	7	10	2	0
Cherwell	19	4	3	10	2	0
Wychavon	19	6	1	10	2	0
Hertsmere	13	3	3	5	2	0
Mendip	14	5	2	5	2	0
West Oxfordshire	15	8	0	5	2	0

Warwick	15	3	6	4	2	0
Reigate and Banstead	18	8	4	4	2	0
Eastleigh	15	6	3	4	2	0
North Devon	14	6	2	4	2	0
Allerdale	12	7	0	3	2	0
East Lindsey	18	5	0	12	1	0
Rushcliffe	15	2	3	9	1	0
Mid Sussex	17	4	4	8	1	0
Mansfield	13	2	3	7	1	0
Selby	10	3	0	6	1	0
Rugby	12	3	3	5	1	0
Sevenoaks	15	8	1	5	1	0
Boston	8	2	0	5	1	0
Wokingham	20	7	8	4	1	0
Newcastle-under-Lyme	16	6	5	4	1	0
Hinckley and Bosworth	14	4	5	4	1	0
Herefordshire	23	15	4	3	1	0
Daventry	10	3	3	3	1	0
Newark and Sherwood	13	7	2	3	1	0
Winchester	14	9	1	3	1	0
Isle of Wight	18	12	3	2	1	0
East Hampshire	15	10	2	2	1	0
Brentwood	9	6	0	2	1	0
Torridge	9	6	0	2	1	0
Epsom and Ewell	9	2	5	1	1	0
Mid Devon	11	6	3	1	1	0
Oadby and Wigston	6	1	4	0	1	0
North Kesteven	13	1	1	11	0	0
Broadland	18	6	3	9	0	0
South Holland	11	1	1	9	0	0
South Staffordshire	14	5	0	9	0	0
Vale of White Horse	14	3	3	8	0	0
West Berkshire	22	11	4	7	0	0
Amber Valley	16	5	4	7	0	0
Fenland	11	0	4	7	0	0
Wealden	21	11	3	7	0	0
Bassetlaw	14	4	3	7	0	0
Tonbridge and Malling	13	3	3	7	0	0
Horsham	16	8	1	7	0	0
Chichester	14	7	0	7	0	0

South Derbyshire	12	2	4	6	0	0
North East Derbyshire	13	4	3	6	0	0
Harborough	10	2	2	6	0	0
East Cambridgeshire	10	3	1	6	0	0
South Norfolk	15	9	0	6	0	0
South Hams	12	6	0	6	0	0
Uttlesford	9	3	0	6	0	0
Wyre Forest	14	4	5	5	0	0
Blaby	12	2	5	5	0	0
Rochford	10	2	3	5	0	0
Stratford-on-Avon	15	8	2	5	0	0
Bolsover	10	2	4	4	0	0
Babergh	11	5	2	4	0	0
Mole Valley	13	9	0	4	0	0
Melton	6	2	0	4	0	0
Runnymede	10	3	4	3	0	0
East Northamptonshire	10	5	2	3	0	0
Maldon	8	3	2	3	0	0
Ribble Valley	8	3	2	3	0	0
North West Leicestershire	13	9	1	3	0	0
Staffordshire Moorlands	13	9	1	3	0	0
Hambleton	11	7	1	3	0	0
North Norfolk	14	11	0	3	0	0
Derbyshire Dales	10	7	0	3	0	0
Surrey Heath	12	7	3	2	0	0
Waverley	17	13	2	2	0	0
Hart	11	7	2	2	0	0
Tandridge	11	8	1	2	0	0
Tewkesbury	9	6	1	2	0	0
Rutland	5	2	1	2	0	0
North Warwickshire	7	5	0	2	0	0
Stroud	15	10	4	1	0	0
Cotswold	11	9	1	1	0	0
Craven	8	6	1	1	0	0
Richmondshire	6	4	1	1	0	0
Ryedale	6	5	0	1	0	0
Isles of Scilly	1	0	0	1	0	0
Rossendale	8	5	3	0	0	0
Malvern Hills	11	10	1	0	0	0
Eden	7	6	1	0	0	0

Forest of Dean	10	10	0	0	0	0
West Devon	7	7	0	0	0	0

Section 6: Fixing the problem – case studies

We have showcased some case studies of community and civic action on green space from the UK and overseas in recognition of the important role communities have in this agenda, and to underline the importance of cooperation by various parties including ensuring the central role of community groups with knowledge, expertise and enthusiasm.

The Tees Valley, Co. Durham

- **The Tees Heritage Park– the renaissance of the river valley**
  https://www.groundwork.org.uk/wp-content/uploads/2019/09/THP-Natural-England-Case-Study.pdf

The Tees Heritage Park stretches from Yarm to Stockton in the Tees Valley, taking in all of the open land along the River Tees including the Leven Valley and Bassleton Beck. For the first time, this attractive stretch of green space in the heart of Tees Valley now has a clear identity and formal planning designation so that it can be promoted as a single park. Despite being the common thread where communities had thrived, the demise of the river-based economy meant people turned their back on the river and saw it as an unattractive place. Unloved and a dumping ground for rubbish, development was piecemeal with little thought for connectivity or the potential of this important environmental asset to boost recreation, nature and wellbeing.

Formed in 2007, the Friends of Tees Heritage Park conceived Tees Heritage Park to bring about a renaissance of the river valley, celebrate its heritage and provide a unique amenity for today's Tees Valley communities. The park is now identified as a major strategic initiative in the Tees Valley Green Infrastructure Strategy, recognising that the 'corridor concept' fits well with the physical structure of much of the Tees Valley sub-region. It also identifies the River Tees as a strategic wildlife corridor providing a major route through the urban area and into the surrounding countryside, with opportunities to increase accessibility for residents.

Created through a partnership between Friends of Tees Heritage Park, Groundwork North East, Environment Agency, the Canal & River Trust, Natural England, Stockton-on-Tees Borough Council and Tees Valley Wildlife Trust, the park officially opened in September 2012 with the completion of the first phase of the project.

Benefits to date include enhancements to the river corridor improving accessible for nearby communities. Formally defining the park has made it easier to protect areas such as the River Leven corridor for wildlife. Site visits with local schools resulted in pupils producing a large number of sculptures that inspired the on-site artworks. QR (Quick Response) code technology enable visitors to download information about the local wildlife and heritage.

By connecting and promoting the existing green space as a single park, this visionary project has reconnecting local people to the local river they had once turned their back on.

Kings Lynn, Norfolk

- **River Lane Pitches - Effective campaigning through the planning consultation process - Fields in Trust**

River Lane Pitches form part of a large area of open space within the North Lynn area of King's Lynn, Norfolk. The fields are within a ward that has particularly poor health and deprivation demographics and is within one of England's top 25% most deprived wards.

35% of the adult population within the ward are identified as obese, putting the ward in the top 20% of obesity rates nationally. At 73.1 years, average life expectancy is in the bottom 20% of life expectancy across England. Within Kings Lynn the ward has the highest rates of crime and antisocial behaviour and among the highest unemployment rates.

The entire space was originally proposed for a major housing scheme by the borough council in its Local Plan allocations. The River Lane pitches themselves were earmarked for the provision of 153 new houses. A community campaign began during the council's consultation process on its plan and a large number of residents engaged in the consultation, and vehemently objected to the inclusion of the River Lane pitches.

As a result of the successful campaign, the council agreed to remove them from the proposal and the tenacity of the residents' association led the council to agree to legally protecting the land under Fields in Trust's UK-wide Active Spaces project, which has protected 50 green spaces across the UK whilst supporting the most inactive members of the community to get out and use their local parks.

The River Lane Sports Pitches project recruited local women who faced barriers to participation. Many young mothers lacked necessary support to take-up physical activity, so the project introduced 'buggy bootcamp' and family fitness sessions on River Lane Pitches - with children in tow. This was complemented with a Couch to 5k scheme - in total, 62 women completed the programme with many running their first 5k. River Lane Pitches will now always be available for the Kings Lynn Community to enjoy for both formal sport, and informal recreation, forever.

This case study was first published in 'Watch This Space" the Fields in Trust handbook for communities to champion and support their local green spaces with an easy-to-use guide to the planning system. Available at www.fieldsintrust.org/watch-this-space

- **Future Proof Parks – getting young people involved in their green space heritage**
  https://www.groundwork.org.uk/projects/future-proof-parks/

Groundwork has partnered with Fields in Trust and National Youth Agency to deliver 'Future Proof Parks', a National Lottery Heritage Fund programme – part of the £10m 'Kick the Dust' initiative – that aims to get more young people interested and involved in preserving their local park and greenspace heritage.

Over the course of the three-year programme, which started in 2018, 880 young people across the UK in the West Midlands, East of England, West of England, North West and North East, will learn more about their local historic park heritage with the overall aim that at

least 180 young people will join their local 'friends of' park groups and volunteer to preserve the local spaces that matter to the communities they live in.

The project will also work with 60 'friends of' park groups to give them the tools, encouragement, and support to get more local young people involved in their work and to see the benefits of cross-generational working. The programme also aims to create crowdfunding campaigns to help raise money for the local parks and to test new ways of generating income as well as engaging the local community.

Future Proof Parks focuses on historic parks and heritage landscapes in five 'hub' locations across England. In each hub young people will be supported to give their time and talents to support local groups and heritage organisations:

East: Hertfordshire, Luton and Essex
North East: South Tyneside, South Shields, Gateshead, Sunderland and Durham
North West: Blackpool, Liverpool, Wigan and Lancashire
West: Bristol and South Gloucestershire
West Midlands: Smethwick, West Bromwich, Oldbury, Stourbridge, Dudley and Tipton

Paris, **France**

- **Cours Oasis - Transforming a school playground into an oasis**
  http://www.meteofrance.fr/actualites/83487673-projet-cours-oasis-transformer-des-cours-d-ecole-en-ilots-de-fraicheur-et-espaces-urbains-de-proximite

Paris has found an innovative way to use existing space creatively to improve the urban environment and provide breathing space in the middle of city streets.

France is facing more frequent and more intense heatwaves and as part of its resilience strategy, and with the support of the EU's Urban Innovative Actions programme, Paris is piloting the transformation of ten school playgrounds into communal spaces that are greener, cooler and more pleasant places, as a retreat from rising summer temperatures.

The goal of Cours Oasis is to invent a model for the schoolyards in the future, co-designed with the schools – teachers, students, parents and other local stakeholders. The 3 year project from 2019-2021 provides ways for local people to participate in an innovative climate change project with the potential to be involved in future planning to transform schoolyards into communal spaces.

The idea is to create spaces for locals to share, especially in the evening or during school holidays, with a mix of inventive play areas, quiet corners, water features, increased vegetation and garden-based learning.

The project is collaborative from start to finish; children are involved in designing the play areas and the oasis is created after consultation with the locals to meet their needs and expectations.

Project delivery partner, Paris Councils for Architecture, Urbanism and Environment, help deliver the co-design phase through workshops, training, community mobilisation and assessment.

The pilot project with ten schools will provide the opportunity to experiment, trying out new technical solutions for construction materials, for urban furniture, for plant varieties, and for neighbourhood engagement and participative democracy. All will provide useful learnings with potential to create scalable and durable approaches to opening-up school playgrounds as green lungs in the heart of the city.

Note that the opening of the school yards has been postponed due to the Covid-19 outbreaks and some of the citizen assembles suspended.

Hackney, London

- **10xGreener – the postcode gardener**
  https://experiments.friendsoftheearth.uk/projects/postcode-gardeners-how-hiring-postcode-gardener-can-bring-nature-back-your-street

Many urban areas are deprived of green space and many city dwellers lack gardens, or the skills to make them thrive. Residents do want greener and healthier streets, but mini projects can founder because it can be hard to maintain new planting.

Early in 2018, Friends of the Earth brought together residents in Daubeny Road, E5 in London to explore how they could make their street *10xGreener*. This yielded the insight that there is a real appetite to meet and join in action with neighbours, but that residents lacked the time or capacity to keep up the good work.

Friends of the Earth then ran a pilot bringing people together to increase and maintain the vegetation and wildlife in the London E5 postcode area, whilst building a more connected community through gardening.

Crowdfunding raised over £6,500 to hire the UK's first postcode gardener and paid for 350 hours of her time to tackle maintenance and organise local residents in transforming the area. Kate Poland worked at 'postcode level' supported by EcoActive, a delivery partner and a group of passionate volunteers to co-create a vision of how the streets could be greened. This was not about helping people nurture their own gardens; it was about planting in public spaces and on-street yards, walls, windowsills, balconies that are publicly visible.

Using her own knowledge and skills and resources especially created for the project, Kate brought people together, ran workshops, sowed seeds, planted in the margins and smashed up concrete to make space for nature. The initiative was very child-friendly and the group was strongly supported by the local primary school, where progress could be celebrated, and plans and ideas shared. Residents continue to support the initiative and fundraise to retain the postcode gardener.

Friends of the Earth then ran a competition with Crowdfunder to kickstart more postcode gardeners. Over 100 entries were received from across the country. The winner from

Bideford, North Devon, raised funds in November 2018 to hire their postcode gardener in 2019. Many useful learnings have come from this pilot and Friends of the Earth is delighted that it creates the beginnings of a replicable model for different kinds of urban centres.

Tottenham, London

- **Lordship Rec - Rescuing and transforming a public park**
  www.parkscommunity.org.uk https://lordshiprec.org.uk/works/

When park users launched the Friends of Lordship Rec in 2001, Tottenham's largest public park was run-down, unstaffed and almost abandoned. The Parks Service of cash-strapped Haringey Council was reduced to the bare bones of grass cutting and litter collection, the buildings were semi-derelict, and anti-social behaviour was rife. Local people rarely ventured in, including those on the neighbouring council estates, Tower Gardens and Broadwater Farm, despite residents having little or no garden space.

Over the past two decades as a result of determined community action, committed community/council partnership-working and substantial funding, the park has been transformed into a vibrant and beautiful multi-functional space for everyone to use, enjoy and benefit from.

Following years of effort, public consultation and collaboration, backed by massive and vocal support from local people, the park underwent a renaissance in 2012 with funding of £7 million from the Lottery, Haringey Council and other sources.

The park now has a new community-run Hub with café and toilets; a new staffed depot; existing buildings and facilities have been restored and a long-term commitment has been made to staffing and maintenance. Nature has been supported by turning a culverted river into a flower-laden meandering channel and more trees, meadows and flower beds have been planted. Bikers have not been forgotten with a new bmx loop track.

A powerful element of the ongoing programme is that community empowerment, enshrined in the park's management plan, has been built into all decision-making. The Friends and user groups manage or part-manage various areas and facilities and co-manage the park as a whole with the Council's Parks Service.

Park usage has tripled. The Friends now have 1400 members, and there are now almost 20 different park user groups promoting cycling, sports and fitness, wildlife, managing the buildings, organising all kinds of events and involving all sections of the community.

This success story in a diverse, predominantly working class area has been a trailblazer and a beacon for what can be replicated across the UK. The Friends host a project promoting community empowerment in green spaces throughout the UK.

Rotterdam, The Netherlands

- ***Rotterdam, sterker door* – Rotterdam onwards, stronger**
  https://dutchreview.com/cities/rotterdam-drops-233-million-on-green-spaces-and-they-look-incredible/

Whilst many small local initiatives can make a neighbourhood greener and more attractive, an ambitious city-wide plan can deliver enormous benefits to many more people and can radically change the image of a city for its citizens and visitors alike.

As an important port, Rotterdam was bombed more extensively than any other Dutch city in WWII and in the scramble to rebuild, its concrete developments have led to it being described as the 'ugliest city in the Netherlands. That is about to change.

Rotterdam has invested 233 million Euros in seven different green city projects, aiming to be complete within a decade. The aim is to counter the negative effects of coronavirus and enhance the quality and appeal of the city, focussing on adding green space to the urban environment. The changes will add that breath of fresh air that Rotterdam has seemed to lack and artists' illustrations portray fountains, trees, greenery, parks and more space for pedestrians and cyclists.

Innovative changes include the transformation of the roof of a railway viaduct, de Hofbogen, into a 2-km long walkway in the heart of the city which includes a circular waterway to contribute to the city's solutions to climate change.

The new 7-hectare Park Maashaven down by the harbour provides much needed green space and an area for festivals and events, whilst the iconic Hofplein will be revamped with more trees and grass and the new Blaak park, combined with a decrease in traffic, will create cleaner air and less noise pollution. The new plans also include a more climate-friendly energy transition.

When complete these transformations will add another aspect to the city's existing urban vibe with spaces for people to breathe more freely, walk, cycle and hang out, designed with post-corona in mind and the enhanced desire for access to green space that lockdowns have created. See the website above for illustrations.

Oldham, Greater Manchester

- **LoveWhereYouLive - how a solution to fly-tipping helped create safe friendly spaces for residents - Hubbub**
  https://www.hubbub.org.uk/Blogs/neighbourhoods-blog/can-community-action-cut-fly-tipping
  https://www.hubbub.org.uk/lovewhereyoulive

Greening the city does not depend on creating dedicated spaces. It can also mean recognising that there can be enormous potential in the overlooked and unloved places in the neighbourhood which can be transformed by a creative solution to a different problem.

Councils have to spend millions of pounds in cleaning up urban fly-tipping and littering, whilst residents suffer the eyesores and sense of neglect that heaps of rubbish create. In Oldham, some back alleys running between the Victorian redbrick terraced houses were neglected, unattractive and unsafe rubbish-strewn waste grounds. No-one was taking responsibility for cleaning up. Hubbub wanted to understand the causes of fly-tipping and to find solutions by working with residents to transform 5 of these fly-tipped alleys into bright and friendly communal spaces.

Key to this transformation was winning the trust of residents and finding powerfully motivated women who wanted their neighbourhood to improve. Either because they wanted safe places for kids to play or a concern that the area was 'going downhill'. Hubbub worked with local councillors, community support teams and local police to identify small bands of residents whose concern could be channelled to turn the fly-tipped alleys into safe, usable spaces.

In the areas where community action worked, the women leading the activities were able to earn the respect of neighbours and be a mutually supportive group with a clear idea of what they wanted. A range of activities proved to be successful in building pride of place, including community events, skills training and bright vibrant messaging. Hubbub turned these into an inspiration guide for others who want to transform shared spaces.

Three successful alleyway transformations with residents reported a 100% decrease in fly-tipping. What had started as a fly-tipping campaign helped build a sense of community, "transformed an environment that brought us continued frustration and despair into one that brings us joy and hope", and helped people feel safer as they came to know their neighbours and their children used safe play areas.

However, the learnings from this project is that it is a slow, expensive and intensive process and requires ongoing commitment from partners and residents. Fly-tipping can be a sign of disconnected communities and can only be addressed by building trust and interaction between neighbours. It is not a quick fix.

Ghent, Belgium

- **The Red Carpet - new child-friendly route through an urban renewal area**
  https://rethinkingchildhood.com/2018/04/03/ghent-serious-child-friendly-urban-planning/

Ghent city authorities faced a challenge when planning the regeneration of Brugsepoort, one of the city's poorest neighbourhoods, where open public and green space is scarce and of very low quality. The 19th century ring accounts for 4% of Ghent's land surface but 25% of its population in a very dense urban fabric.

The plan became an urban renewal project, *Oxygen for the Brugespoort,* to create extra open public space in the dense neighbourhood, to improve the housing stock and to help foster cohesion in an economically disadvantaged area.

A strategic element is *The Red Carpet*, a 2km traffic-calmed linear route through Brugespoort, linking neighbourhood children's facilities including a school, a kindergarten and several public spaces. The project involved extensive traffic calming (with distinctive red stones laid out in a herringbone pattern), a new traffic-free bridge, a new multi-purpose public space including informal sports facilities and a new 24/7 pedestrian walkway running right through Pierkespark, a historic building.

Elisabeth Belpaire who worked on the project draws several lessons from her experience:

- The spatial/physical re-structuring of the neighbourhood takes long-term planning and commitment such as buying up strategically located properties over time that can

be turned into new public and green space - literally adding 'oxygen' to the neighbourhood.

- The 'Red Carpet' has become the 'soft spine' of the area, an axis connecting existing and new local services such as a library, kindergarten, and public spaces such as the newly created squares and parks. Increasing the connectivity between the Brugsepoort and other neighbourhoods was also important for increasing 'walkability'. It also meant strengthening connections with other neighbourhoods through 'bridges', literally and figurative. And with city-level networks for pedestrians and cyclists.
- You need both political leadership and intense collaboration with grassroots organisations and youth representatives, through the establishment of a local coalition to achieve a high level of citizen participation. Both are key for the creation of a new identity and a 'new memory' for the neighbourhood. Whilst it is essential to keep people in the neighbourhood and avoid gentrification it is a delicate balancing act to support the original communities as well as fostering economic growth and social mix.

Ghent has also taken forward some major new green spaces, with four destination 'green poles' either in place or on the way. Schoolyards are being refurbished in naturalistic ways. More than half of schools now have a green schoolyard, in a move inspired by a study visit to Berlin. Ghent is keen to rethink streets, with 140+ play streets alongside school streets (which are closed to traffic at certain times of the school day) and some of the region's first 'bike street' (fiets straat) projects, where bicycles have priority over cars.

Inverclyde, Scotland

- **Green Gym, The Conservation Volunteers (TCV)**

Inverclyde has the highest local share of all councils in Scotland of 5%, 10% and 20% most deprived data zones, and the second highest local share of all councils of areas in the 15% most deprived data zones. [xxviii]

A green space audit identified a number of underperforming green spaces. Working with Inverclyde Council and Glasgow & Clyde Valley Green Network Partnership, TCV identified priority sites where environmental and accessibility improvements would be most beneficial and sites near communities with the greatest need.

TCV established a new Green Gym group and ran a 12 week Branching Out programme at Coves Reservoir Local Nature Reserve, working with a number of local partner organisations, including Scottish Association for Mental Health and Belville Community Garden Trust, to undertake green space improvements.

Woodland was managed and volunteers were trained in woodland maintenance techniques. Biodiversity was improved with the planting over 350 trees and increasing the variety of wildflower species. Accessibility was improved by widening and clearing paths, improving drainage, and clearing and repairing steps.

Green Gym volunteers reported higher levels of physical activity and scored higher on the Short Warwick-Edinburgh mental wellbeing scale after taking part. Feedback included:

"Anxiety stops me from sleeping most nights but after the Green Gym I sleep really well."
"I used to just go to the Green Gym but now I go walking and to the gym sometimes as well."
"The Green Gym is very important for my physical and mental health as it's the only time in the week that I get out of the house."

A self-sustaining group of volunteers arose from this project and the *Friends of Coves Nature Reserve* are now a volunteer-led constituted group, running weekly land management sessions and monthly community litter picks.

Leicestershire

- **Green Gym, The Conservation Volunteers (TCV)**

Rolleston Green Gym was established in the grounds of Rolleston Primary School in June 2019 to provide intergenerational activities including food growing and wildlife improvement on local green spaces.

The Green Gym enjoys strong support from local communities including Eyres Monsell, which is in the first quintile of the 2015 Index of Multiple Deprivation among Leicester City communities, Harborough District Council, and Saffron Health Practice, which hosts regular giveaways of spare plants and promotes the project to patients.

David, a local single parent, discovered the Green Gym through his son, who is a regular attendee. David had faced many challenges in life, affecting his health and wellbeing, including feeling isolated from his community, and was looking for new opportunities to connect with other people. He developed strong practical, creative, leadership and organisational skills and, one year on, is undertaking further training to gain the skills to become a TCV Volunteer Officer and support the Green Gym to become independent and self-sustaining. As David says:

"*I have made new friends and learned to deal with people that I would not usually get on with. It is nice to feel comfortable in a group*"

In October 2019, David and his son were presented with an Eyres Monsell Volunteer Award by Councillor Karen Pickering, to recognise his contribution to Rolleston Green Gym. David has since expanded his voluntary activity, volunteering regularly at South Wigston food bank and becoming a key member of the Eyres Monsell Action Group. In 2020, he signed up as an NHS Volunteer Responder, where he delivers medication to people who are vulnerable and shielding.

Adur & Worthing, West Sussex

- **Growing Communities, The Conservation Volunteers (TCV)**

In September 2015, 25 local green space and 'Friends of…' groups were identified as working largely in isolation from each other in Adur & Worthing. A consultation exercise with these groups, the local councils and other local partners identified a need for mutual support and the potential for joint working.

TCV and Adur & Worthing Councils facilitated regular monthly meetings during which the groups shared their achievements and plans for the future. This provided a better understanding of groups' capabilities and needs and enabled TCV and Adur & Worthing Councils to work with groups to design extra support. A green space partnership, *Green Tides*, was developed and supported and became independently constituted in 2017.

In 2018, *Green Tides* secured around £10,000 from Awards for All to fund marketing materials, including a professionally designed website, and training which included emergency first aid, chainsaw and strimmer use, and "Train the Trainer".

The Growing Communities programme, delivered by TCV in partnership with Adur & Worthing Councils, has supported *Green Tides* to develop new local partnerships, expand membership to 40+ groups, and develop the resilience and sustainability of *Green Tides*.

Feedback from *Green Tides* includes:

> "*Support with funding applications has meant that funding has been obtained quickly and in a timely manner to grow and develop Green Tides e.g. the website, branding, raised social media profile and insurance for groups."*
> "*Support with recruiting new committee [members] recently has increased capacity of the committee."*
> "*Doing events jointly with Growing Communities has made going to events achievable and Green Tides has been able to attend more events and raise their profile in the community through this."*

East London

- **Lea Marshes, East London**
  https://sustainablehackney.org.uk/profile/SaveLeaMarshes https://www.saveleamarshes.org.uk/2019/09/26/help-make-lea-bridge-waterworks-a-wild-haven/

Save Lea Marshes began as the campaign to 'Save Leyton Marsh' and in 2013 expanded its remit to protect Leyton, Hackney and Walthamstow Marshes as open green spaces for future generations, regardless of income.

The vision for the Waterworks in East London involves re-connecting, restoring and rewilding much of historic Leyton Marshes for the benefit of people and wildlife. Part of the site is already a designated nature reserve, with the former Thames Water Depot on one side and the Waterworks Meadow on the other.

The campaign is crowdfunding for ecological surveys of the Waterworks Meadow to protect it from inappropriate commercial exploitation, such as the large- scale music festival which was prevented through a vocal community campaign in 2020.

Ecological data collected will be used to persuade the Lee Valley Regional Park Authority to protect and enhance the habitat rather than use it as an events venue – rewilding the meadow for the benefit of wildlife and encouraging back endangered birds, reptiles, insects and plants. The site, a former golf course, has already begun to naturally regenerate, red-listed birds and other threatened species have been recorded there.

The campaign is also working with other community groups and CPRE London to protect the neighbouring Thames Water site from development so that it can be opened up to public access and re-imagined as the East London Waterworks Park; a place for wild swimming and community horticulture, with the vital habitat along the river connecting up with the Middlesex Filter Beds Nature Reserve, while other parts of the site will be left to naturally regenerate for wildlife.

The Waterworks Meadow and East London Waterworks Park will provide people with low-cost opportunities to improve their physical health by promoting walking, horticulture and wild swimming. Reconnecting these areas will enable people to roam freely throughout the Lower Lea Valley following long-distance walking routes.

This new vision for the historic Waterworks will create and increase biodiversity, support climate resilience, improve health outcomes and strengthen people's access and connection with nature – all vital for the coming ecological challenges ahead.

> "*We're really excited about our vision for the Waterworks. In times of ecological emergency this rewilding project could not only improve biodiversity but create opportunities for people to better connect with nature whilst at the same time enhancing climate resilience going into the future*." Caroline Day, organizer.

Community action to save green spaces

There is no shortage of examples of grassroots community groups campaigning in various ways to protect green space, increase the quantity and the quality of green space for public amenity and for nature. This section provides just a handful of recent examples of spaces large and small being stood up for by communities especially those supported by the Open Spaces Society (OSS).

Across England, countless communities – too many to mention – are having to defend local green spaces which are either being actively targeted for development, whether for relatively small-scale changes in land use or for major new development, housing and infrastructure schemes, or are at risk of neglect and falling into abeyance from loss of funding, neglect, lack of oversight or a combination of these and other factors.

The cases have often involved challenging local council bureaucracy, standing up to developers who have the influence and access to decision makers, and the deep pockets to fight for their proposals over time, and knowing how to use the planning and legal system, often with support from organisations such as the OSS.

Whitehall Road Field in Blackburn, Lancashire: The Whitehall Road Neighbourhood Group has secured local green space as an Asset of Community Value (ACV) approved by Blackburn with Darwen Borough Council www.oss.org.uk/blackburn-group-win-support-of-borough-council-for-new-asset-of-community-value/

Freeman's Wood in Lancaster, Lancashire: Friends of Freeman's Wood successfully persuaded Lancashire County Council to register Freeman's Wood as a town green (TGV).

Freeman's Wood is a nine-hectare open field surrounded by woodland beside the Lune industrial estate on the west side of Lancaster. Originally a waste tip for the former linoleum factory, since the 1960s the wood has been used for informal recreation.

The Friends of Freeman's Wood applied for TGV status when the land was partially fenced in 2012. Lancashire County Council eventually heard the case at a public inquiry in 2019. The Council endorsed the recommendation of the inquiry inspector, barrister Alan Evans, and agreed to register the land.

Meanwhile, Satnam Investments Ltd is acting on behalf of the landowner and has applied for planning permission for 250 houses on the land. www.oss.org.uk/lancaster-green-space-saved-for-the-community/

Leigh Common, Colehill, Wimborne, Dorset: Leigh Common is a nine-hectare woodland and grassland nature reserve in Colehill, near Wimborne—the first common land in Dorset to be registered in 1967 and given permanent protection.

In 2016 developers Gleeson Developments Ltd applied to Dorset Council to deregister about 1.3 hectares, or one-seventh of the common either side of Leigh Road. Lewis Wyatt (Construction) Ltd then applied in 2017 to deregister part of the same land. The developers applied under section 19 of the Commons Act 2006, on the grounds that a mistake had been made by the commons registration authority.

Both developers at that time had interests in building on land to the south of Leigh Road, and had permission from the Secretary of State for road works on the common to enable access to their development sites.

In December 2018, Dorset Council granted the applications relating to most of the land south of Leigh Road, agreeing with the developers that it must have made a mistake in 1967 in provisionally registering the land under the Commons Registration Act 1965. It agreed with the developers that the land at that time was part of the highway comprised in Leigh Road, and should not have been registered. It ignored the Open Spaces Society's case that there had been no mistake originally. The Society challenge the decisions and, following receipt of the pre-action protocol letter, Dorset Council agreed that its decisions were wrong, and that they should be quashed.

Neither Gleeson nor Lewis Wyatt objected, but BDW Trading Ltd (part of Barratt Developments plc), which had purchased Gleeson's interest in adjoining land, refused to agree to the decisions being quashed. The Society was obliged to seek a judicial review.

Leigh Common is now protected because the Open Spaces Society steadfast challenge that it was correct that the land was registered as common land, even though it might also be part of the highway, and the court order supports that view.

Many other commons in England are partly or wholly highway land, and had BDW's view prevailed, it could have led to local authorities deregistering land all over the country, opening them up to development.

www.oss.org.uk/leigh-common-saved-from-development/

Amenity Green, Bovingdon, Hertfordshire: 140 square metres of roadside verge or 'amenity green' in the village of Bovingdon, near Hemel Hempstead, was targeted by Dacorum Borough Council for six, surfaced, car-parking bays, near the junction of High Street and New Hall Close. The proposal on common land meant the Council required the Environment Secretary's consent under section 38 of the Commons Act 2006.

The Open Spaces Society said that the use of the common for car-parking was inconsistent with the public's enjoyment of the common as parking bays would reduce the area available for public recreation, and they would have an urbanising effect.

Rejecting the application, the planning inspector said that "parked vehicles will seriously interfere with public rights of access over the common and will also interfere with the land's apparently established use at Easter and Christmas for religious displays and events… the proposals will unacceptably harm the interests of the neighbourhood and rights of public access over the land".

The inspector added that provision of parking bays was not consistent with government policy that works should take place only where they maintain or improve the condition of the common and that any wider benefit from the parking provision was "outweighed by the harm the works will cause to the appearance of the common and how it is used".
www.oss.org.uk/we-help-to-save-part-of-hertfordshire-common/

Yateley Common in Hampshire: Yateley Common is threatened by proposed expansion of Blackbushe Airport
www.oss.org.uk/blackbushe-airport-ruling-could-put-many-commons-under-threat/ and
www.oss.org.uk/the-meaning-of-curtilage/

Section 7: Conclusions and recommendations

Conclusions

The consensus is clear: people need quality green spaces and parks and want more routine contact with vibrant nature. Access to quality green space nearby underpins health and other aims and brings considerable financial savings.

Improving access to rural landscapes should be in addition to people having quality green space on their doorstep for the rest of the time when they cannot readily visit a National Park or Area of Outstanding Natural Beauty.

The lack of green space in large numbers of neighbourhoods across England is clearly a significant problem. It is a problem for mental and physical health. It is a problem for climate adaptation. And it is a problem for biodiversity. It is a problem for sound use of public funds.

Both the quantity and the quality of accessible green space matter, but there is a paucity of data to enable an England-wide analysis.

The lack of quality green space is also an issue disproportionately affecting people from black, Asian and minority ethnic populations. If you are a BAME person you are more than twice as likely as a white person to live within the areas most deprived for green space (rated E).

That finding is particularly pertinent given the disproportionate effect of Covid-19 on people of BAME backgrounds, and the imperatives of Black Lives Matter.

The decline in funding for councils has negatively impacted on the green space agenda over several decades and especially in the most recent. But not all councils can wash their hands of the problem and blame central government funding alone. Some councils have allowed the loss of valuable green space in areas of paucity.

The effort of Fields in Trust, the Open Spaces Society and many others, such as the 6,000+ parks friends' groups, in highlighting these issues and battling to save valued spaces needs to be applauded and taken seriously.

Central and local government, professions and communities can all now be part of reversing the decline of nature and green spaces and making 'nearby nature' and space for health and well-being a reality.

The knowledge and the means also exist to weave sustained support for green spaces into existing strategies to boost public health, learning, skills and formal education alongside action to reduce climate changing emissions, and to restore England's deteriorating wildlife and natural habitats and people's lack of contact with nature.

Lasting commitment will be needed, including through quality land use planning and proper funding for the long term alongside novel forms of finance to provide the skilled services that are needed to properly plan, use and care for parks and green spaces to maximise their role and prevent their decline.

The unique multi-purpose role and 'natural health service' benefits provided by decent access to quality green spaces and parks have been described as a 'triple win' for improved health, reduced heath inequalities and improved environmental conditions. As stated by the

University of Exeter's study, "Where these multiple benefits are fully appreciated and evaluated, the costs are more likely to be justifiable." [133]

Recommendations

Now is the time to invest in the quantity and quality of England's green (and blue) spaces, parks, green corridors and neighbourhoods. Our policy recommendations chime with many others who have examined these issues for some time, including backers of the *Parks Charter* [134], which is endorsed by 24 national organisations and over 170 regional and local organisations. [135]

The undoubted value and importance of access to quality parks and green and blue spaces means that to level up access to quality green spaces and parks across England **the government should**:

1. **Protect existing space forever**

There should be a legal requirement to protect and enhance the quality of all existing public green space for people and nature, plus a requirement for quality green space in new developments. A revised National Planning Policy Framework could include these requirements. Existing green space can be protected through covenants, and mechanisms such as Fields in Trust's *Green Spaces for Good* programme. [136]

2. **Create new green spaces**

Creation of new green spaces is particularly needed in areas where the quantity is low (i.e. rating D and E) and access is poor (i.e. when it is more than 5 minutes' walk for most people).

The idea that there is a lack of available space for new provision in some urban areas is laughable when the quantity of space given over to cars is considered, particularly given the levels of car ownership in the most green space disadvantaged communities is low.

Closing some streets permanently and turning them into play areas with green infrastructure is a natural next step from the advent of Play Streets.

Local authorities can also secure or negotiate access for the public to green space which is currently limited or closed to access (for example, school playing fields out of school hours, golf courses).

3. **Improve the land use planning system for green spaces and nature**

The current land use planning system in England needs to be improved to provide proper green spaces for people and nature. Planning reform must ensure that existing parks and green spaces are retained and require quality green space in new development as standard, not as an afterthought. Green spaces and parks should be treated as part of the wider realm, not as isolated oases, to meet the green space needs this report identifies.

Local Plan and Supplementary Planning Documents should support the protection and enhancement of green spaces and identify the location for the creation of new spaces consistent with the retention and creation of ecologically coherent nature networks and green infrastructure strategies

Joint Strategic Needs Assessments and Joint Health and Wellbeing Strategies should also address green space provision, access and use.

4. **Invest in green spaces to level up the benefits**

The long-term decline in parks and green space funding should be ended with ongoing finance commitments of £4-5 bn a year to 2024. Funding should then be allowed to level off at steady levels to ensure that quality and quantity standards once established are maintained, and that the risks of stop-start investment are avoided.

We note that the recommendations from the National Trust, Sustrans, Create Streets and the Heritage Lottery Fund (HLF) and others including the Mayors of the west Midlands, Andy Street, and Bristol's Marvin Rees that the government should invest £5.5 billion to boost public access to green spaces, especially in areas lacking proper provision.[137]

The grouping assessed that these activities would result in some £200 billion in health and social benefits, in keeping with the substantial evidence highlighted in this and other report on the advantages of routine contact with nature, green and open spaces whether for recreation and exercise, leisure and learning, or more.

5. **Factor in cost savings and benefits**

The many and varied financial cost savings and benefits should be factored fully into policies and decisions about land use, the design and layout of development, and ongoing use and aftercare.

6. **Ensure both quality and quantity**

The multi-functional role of green spaces and parks should be factored into aims and strategies for: health and wellbeing, fitness and physical activity; skills and both informal learning and formal education; restoring nature, storing carbon and addressing stressors such as excessive heat; and, community engagement and outreach, including action to overcome loneliness.

These issues map on to government departments making green spaces and parks a pan-Whitehall responsibility involving at least, nine departments of state:

Business, Energy and Industrial Strategy (BEIS)
Culture, Media and Sport (DCMS)
Education (DoE)
Environment and Rural Affairs (Defra)
Health and Social Care (DHSC)
Housing, Communities and Local Government (HMCLG)
Transport (DfT)
HM Treasury (HMT)
Work and Pensions (DWP)

7. **Explore new forms of funding**

Allocating proportions of the cost savings provided to society by the functioning of quality green spaces such as urban cooling, flood prevention and carbon storage, and from social

prescribing budgets in support of active use of parks and green space for better health and less pressure on health and social welfare services and budgets.

Since 2012, Nesta's Rethinking Parks work has also been exploring news ways to finance and manage public parks.[138]

We also note that the Social Market Foundation has also reflected on C-19 and the funding squeeze and has suggested ways to secure funding for parks. [139]

8. Making parks and green space a statutory service

Ending the situation where local councils have run and managed parks and open spaces, but not as a statutory requirement.

9. Ensure green space is developed with and for people of all cultures

Residents and users' voices must be heard in the management of green space to ensure it is an inclusive environment (for example, some communities may want areas where Muslim women can meet away from men). Community involvement in the practical management of green space (e.g. planting and nature conservation) should also be encouraged and resourced, including through approaches such as social prescribing.

A wealth of expertise also resides in communities on nature conservation, children's play, outdoor learning and education, and these and other resources can be better used by local authorities and others as part of the approach to skills, learning and better use and management of spaces for people and nature.

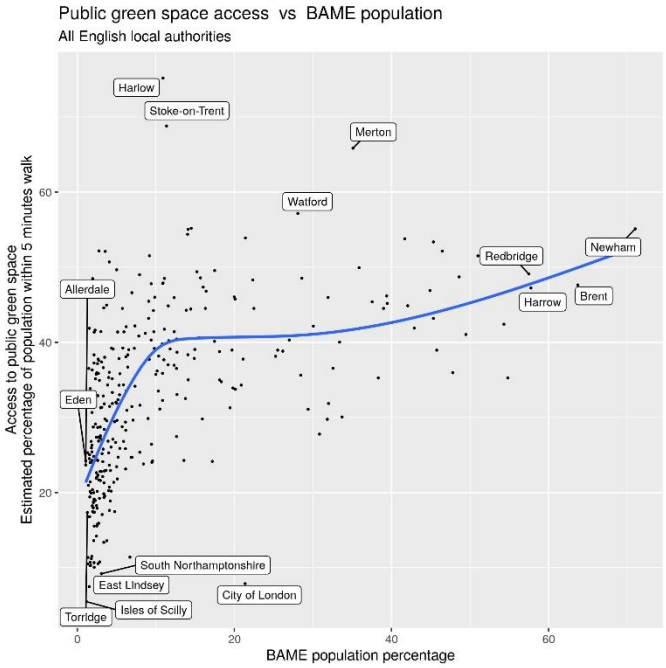
10. Make green spaces hubs for learning and skills

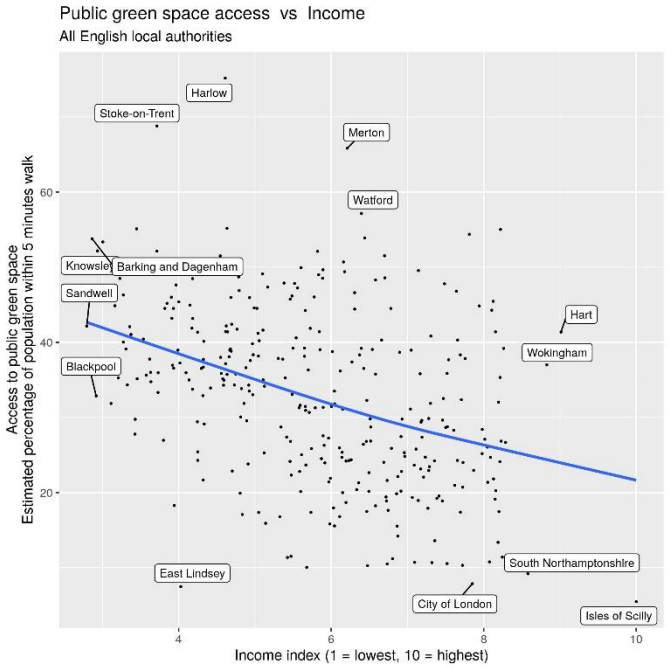
Green spaces, parks and nature areas can and should be places where people can acquire new skills, knowledge and confidence both through informal outdoor learning and formal skills and education strategies.

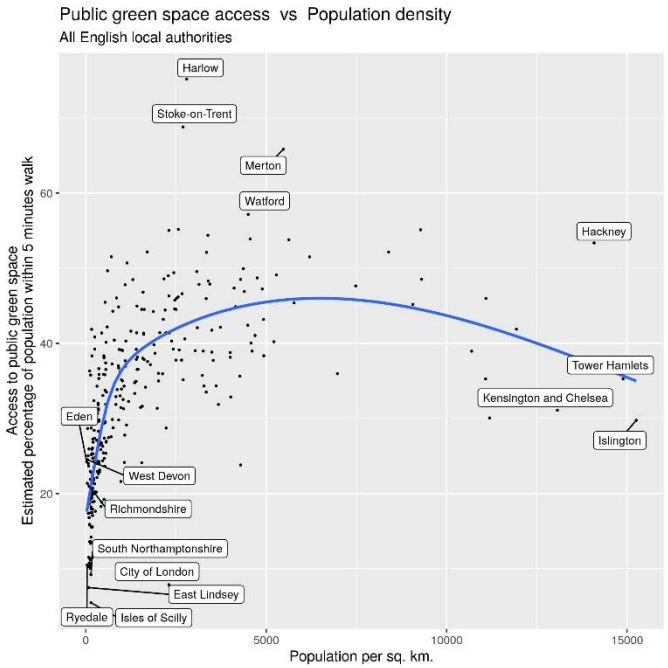
Appendix 1 - Scoring approach

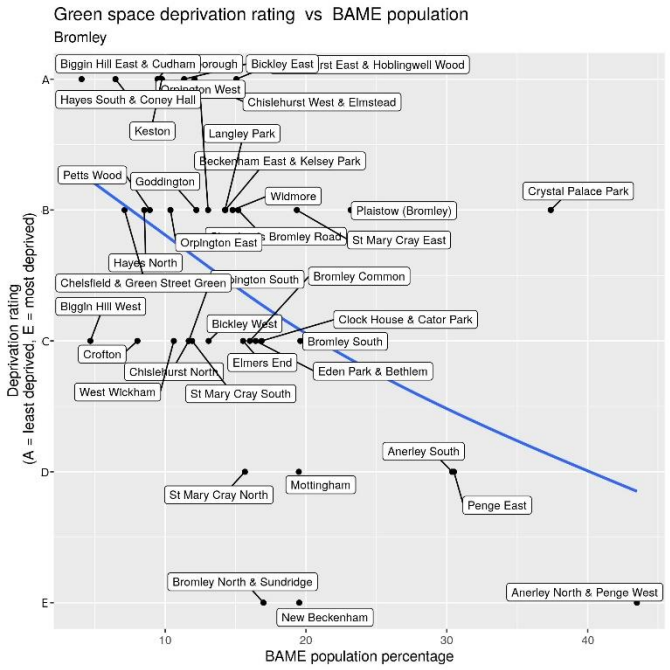
Categories	Total green space	Access	Gardens
RATING E (Least green space) Very small gardens and very small amount of public green space	1	1 to 4	1
Very small gardens and small amount of public green space more than 5 minutes' walk for 75% or more of residents	2	1	1
Small gardens with very small amounts of green space more than 5 minutes' walk away for 75% or more of residents	1	1	2
RATING D Very small garden and large or very large amounts of green space within 5 minutes' walk, although more than 5 minutes' walk away for 75% or more of residents	3 to 4	1	1
Very small garden with small amount of green space less than 5 minutes' walk for up to 75% of residents	2	2 to 4	1
Small garden with very small amounts of public space less than 5 minutes' walk for up to 75% of residents	1	2 to 4	2
Small garden with small amount of public green space more than 5 minutes' walk for 75% or more of residents	2	1	2
RATING C Small garden and large or very large amounts of public green space more than 5 minutes' walk for 75% or more of residents	3 or 4	1	2
Small garden and small amounts of green space less than 5 minutes' walk for up to 75% of residents	2	2 to 4	2
Large or very large garden and very small or small amount of public green space more than 5 minutes' walk for 75% or more of residents	1 or 2	1	3 or 4
RATING B Very small or small garden but large or very large amounts of public green space less than 5 minutes' walk for up to 75% of residents	3 or 4	2 or more	1 or 2
Large gardens and a small amount of public green space less than 5 minutes' walk for up to 75% of residents	1 or 2	2 or more	3 or 4
RATING A (Most green space) Large or very large gardens and large or very large amounts of public green space	3 or 4	1 or more	3 or 4

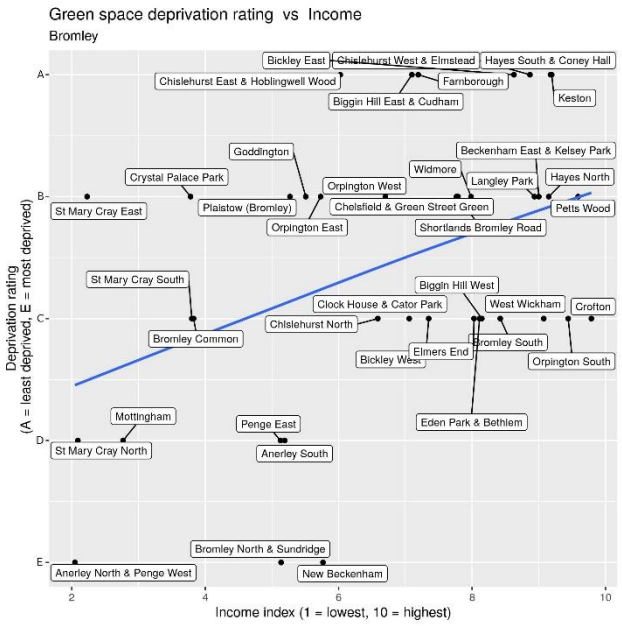
Appendix 2 – Further graphs (with example of local authority specific graphs)

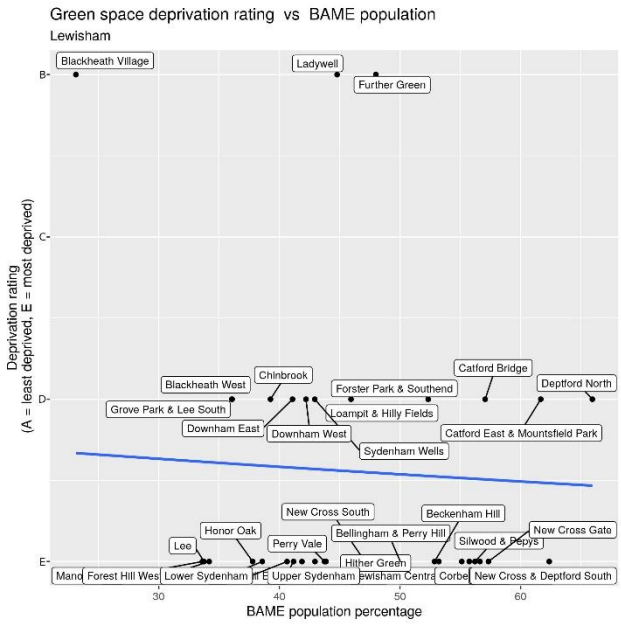


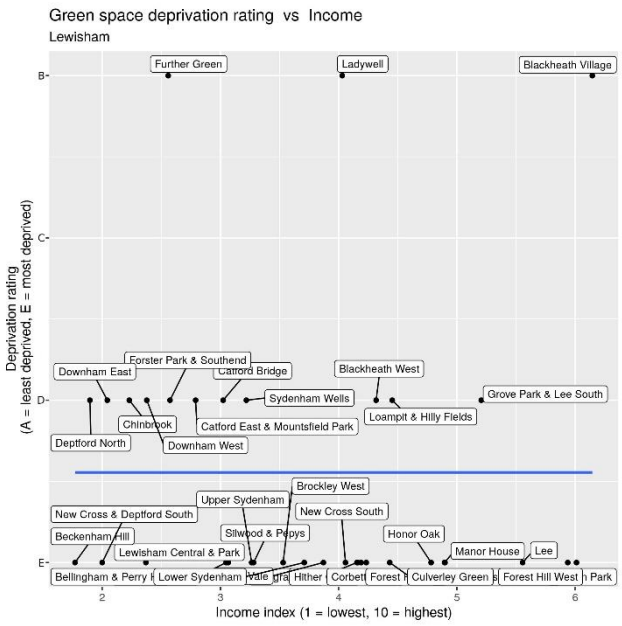


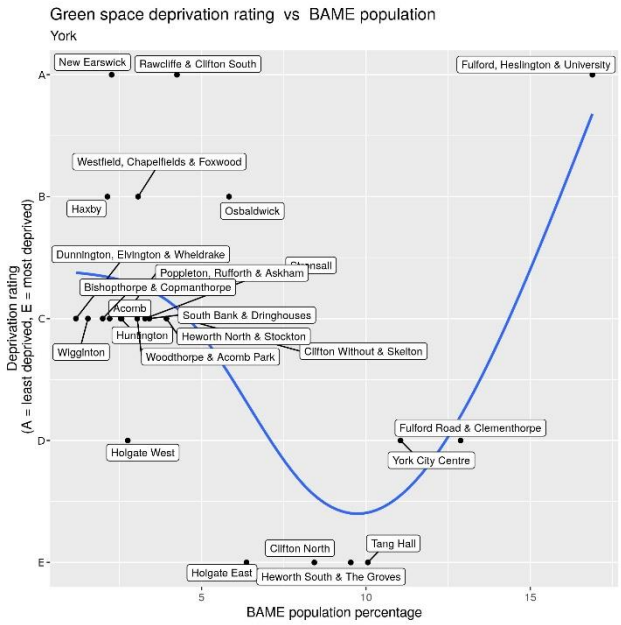


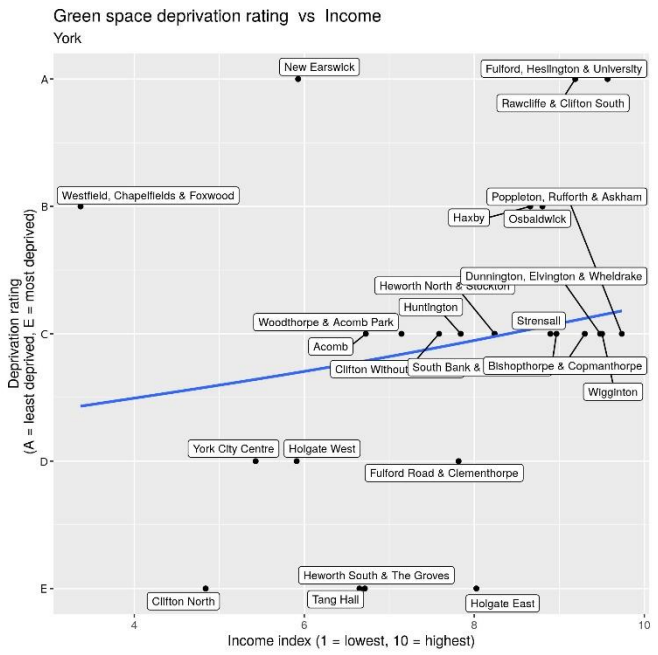

Green space deprivation rating vs BAME population
Bromley
Deprivation rating
(A = least deprived, E = most deprived)
BAME population percentage
Biggin Hill East & Cudham
Bickley East
Hayes South & Coney Hall
Chislehurst West & Elmstead
Keston
Langley Park
Petts Wood
Goddington
Wildmore
Plaistow (Bromley)
Crystal Palace Park
Orpington East
St Mary Cray East
Hayes North
Chelsfield & Green Street Green
Bromley Common
Biggin Hill West
Bickley West
Clock House & Cator Park
Crofton
Bromley South
Elmers End
Chislehurst North
Eden Park & Bethlem
West Wickham
St Mary Cray South
Anerley South
St Mary Cray North
Mottingham
Penge East
Bromley North & Sundridge
Anerley North & Penge West
New Beckenham


Green space deprivation rating vs Income
Bromley
Deprivation rating
(A = least deprived, E = most deprived)
Income index (1 = lowest, 10 = highest)
Bickley East
Chislehurst West & Elmstead
Hayes South & Coney Hall
Chislehurst East & Hoblingwell Wood
Farnborough
Keston
Biggin Hill East & Cudham
Goddington
Beckenham East & Kelsey Park
Crystal Palace Park
Wildmore
Langley Park
Hayes North
Orpington West
Plaistow (Bromley)
Chelsfield & Green Street Green
Petts Wood
St Mary Cray East
Orpington East
Shortlands Bromley Road
St Mary Cray South
Biggin Hill West
Clock House & Cator Park
West Wickham
Crofton
Chislehurst North
Bromley Common
Elmers End
Bromley South
Bickley West
Orpington South
Mottingham
Penge East
Eden Park & Bethlem
St Mary Cray North
Anerley South
Bromley North & Sundridge
Anerley North & Penge West
New Beckenham


Green space deprivation rating vs BAME population
Lewisham
Deprivation rating
(A = least deprived, E = most deprived)
BAME population percentage
Blackheath Village
Ladywell
Further Green
Blackheath West
Chinbrook
Catford Bridge
Deptford North
Forster Park & Southend
Grove Park & Lee South
Loampit & Hilly Fields
Downham East
Downham West
Catford East & Mountsfield Park
Sydenham Wells
New Cross South
Beckenham Hill
Honor Oak
Bellingham & Perry Hill
New Cross Gate
Perry Vale
Silwood & Pepys
Lee
Hither Green
New Cross & Deptford South


Green space deprivation rating vs Income
Lewisham
Deprivation rating
(A = least deprived, E = most deprived)
Income index (1 = lowest, 10 = highest)
Further Green
Ladywell
Blackheath Village
Forster Park & Southend
Downham East
Catford Bridge
Blackheath West
Sydenham Wells
Grove Park & Lee South
Loampit & Hilly Fields
Chinbrook
Catford East & Mountsfield Park
Deptford North
Downham West
Brockley West
Upper Sydenham
New Cross & Deptford South
New Cross South
Beckenham Hill
Silwood & Pepys
Honor Oak
Lewisham Central & Park
Manor House
Lee
Bellingham & Perry
Lower Sydenham
Hither
Culverley Green
Forest Hill West


Green space deprivation rating vs BAME population
York
New Earswick
Rawcliffe & Clifton South
Fulford, Heslington & University
Westfield, Chapelfields & Foxwood
Haxby
Osbaldwick
Dunnington, Elvington & Wheldrake
Strensall
Poppleton, Rufforth & Askham
Bishopthorpe & Copmanthorpe
Acomb
South Bank & Dringhouses
Huntington
Heworth North & Stockton
Wigginton
Woodthorpe & Acomb Park
Clifton Without & Skelton
Fulford Road & Clementhorpe
Holgate West
York City Centre
Clifton North
Tang Hall
Holgate East
Heworth South & The Groves
A
B
C
D
E
5
10
15
Deprivation rating
(A = least deprived, E = most deprived)
BAME population percentage


Green space deprivation rating vs Income
York
New Earswick
Fulford, Heslington & University
Rawcliffe & Clifton South
Westfield, Chapelfields & Foxwood
Poppleton, Rufforth & Askham
Haxby
Osbaldwick
Dunnington, Elvington & Wheldrake
Huntington
Woodthorpe & Acomb Park
Strensall
Acomb
Clifton Without
Bishopthorpe & Copmanthorpe
Wigginton
York City Centre
Holgate West
Fulford Road & Clementhorpe
Heworth South & The Groves
Clifton North
Tang Hall
Holgate East
A
B
C
D
E
4
6
8
10
Deprivation rating
(A = least deprived, E = most deprived)
Income index (1 = lowest, 10 = highest)

Appendix 3 - Links to other organisations

CPRE is the Countryside Charity working for almost a century to support, protect and promote the countryside. https://www.cpre.org.uk/

Fields in Trust has a long heritage of protecting playing spaces, formerly as the Playing Fields Association. http://www.fieldsintrust.org/

Groundwork is a federation of charities carrying out practical community action to tackle poverty and to improve through including local neighbourhood action. https://www.groundwork.org.uk/

Heritage Lottery Fund is the largest dedicated grant funder of the UK's heritage. https://www.heritagefund.org.uk/

Learning Through Landscapes helps children and young people to connect with nature, become more active, learn outdoors and have fun. https://www.ltl.org.uk/

National Children's Bureau (NCB) works to make education, health and social care services as effective as possible to strengthen families and help our children overcome the many challenges that can hold them back. https://www.ncb.org.uk/

National Federation of Parks and Green Spaces (NFPGS) is the umbrella organisation that aims to amplify the voices of Friends Groups across the UK. https://natfedparks.org.uk/

National Trust is Europe's largest conservation charity, looking after nature, beauty and history for the nation to enjoy. https://www.nationaltrust.org.uk/

Open Spaces Society (OSS) Britain's oldest conservation has been defending open spaces, village greens commons and footpaths in England and Wales since 1865. https://www.oss.org.uk/

People's Postcode Lottery Since 2005, players of the Postcode Lottery have raised over £600 million for good causes including projects and activities linked to green spaces. https://www.postcodelottery.co.uk/

Rethinking Childhood Tim Gill leads thinking on children's play and free time, and their evolving relationships with the people and places around them. https://rethinkingchildhood.com/

The Conservation Volunteers (TCV) For over sixty years TCV has helped thousands of people across the UK to find, hep and enjoy their local green spaces. https://www.tcv.org.uk/

The Parks Charter The Charter for Parks has been developed to champion and celebrate the role of quality parks in neighbourhoods and to call on leaders of UK governments to recognise and properly fund parks. https://parkscharter.org.uk/

The Wildlife Trusts runs hundreds of nature reserves at which people can help practical nature conservation activity and get more contact with nature while acquiring skills and building confidence. https://www.wildlifetrusts.org/

Appendix 4 – Government planning policy

The government's planning policy for England rightly recognises the importance of open space for recreation, leisure, sport and people's health and quality of life.

For example, chapter 8 of the National Planning Policy Framework (NPPF) on 'Promoting healthy and safe communities'[140] states:

- That '*planning policies and decisions should aim to achieve healthy, inclusive and safe places*". (NPPF paragraph 91, page 27)
- The need to "enable and support healthy lifestyles, especially where this would address identified local health and well-being needs – for example through the provision of safe and accessible green infrastructure,..." (NPPF paragraph 91(c), page 27)
- The need "To provide the social, recreational and cultural facilities and services the community needs, planning policies and decisions should:

a) plan positively for the provision and use of shared spaces, community facilities (such as local shops, meeting places, sports venues, open space, cultural buildings, public houses and places of worship) and other local services to enhance the sustainability of communities and residential environments;

b) take into account and support the delivery of local strategies to improve health, social and cultural well-being for all sections of the community;

c) guard against the unnecessary loss of valued facilities and services, particularly where this would reduce the community's ability to meet its day-to-day needs." (NPPF paragraph 92, page 27)

Paragraphs 96-98 of the NPPF also requires that Local Plan policies drawn up by local planning authorities are based on robust and up-to-date assessments of the needs for open space, sports and recreation facilities (including deficits or surpluses in quantity or quality) and opportunities for new provision:

> Open space and recreation
>
> 96. Access to a network of high quality open spaces and opportunities for sport and physical activity is important for the health and well-being of communities. Planning policies should be based on robust and up-to-date assessments of the need for open space, sport and recreation facilities (including quantitative or qualitative deficits or surpluses) and opportunities for new provision. Information gained from the assessments should be used to determine what open space, sport and recreational provision is needed, which plans should then seek to accommodate.
>
> 97. Existing open space, sports and recreational buildings and land, including playing fields, should not be built on unless: a) an assessment has been undertaken which has clearly shown the open space, buildings or land to be surplus to requirements; or b) the loss resulting from the proposed development would be replaced by equivalent or better provision in terms of quantity and quality in a suitable location; or c) the development is for alternative sports and recreational provision, the benefits of which clearly outweigh the loss of the current or former use.
>
> 98. Planning policies and decisions should protect and enhance public rights of way and access, including taking opportunities to provide better facilities for users, for example by adding links to existing rights of way networks including National Trails.

99. The designation of land as Local Green Space through local and neighbourhood plans allows communities to identify and protect green areas of particular importance to them. Designating land as Local Green Space should be consistent with the local planning of sustainable development and complement investment in sufficient homes, jobs and other essential services. Local Green Spaces should only be designated when a plan is prepared or updated, and be capable of enduring beyond the end of the plan period.

100. The Local Green Space designation should only be used where the green space is: a) in reasonably close proximity to the community it serves; b) demonstrably special to a local community and holds a particular local significance, for example because of its beauty, historic significance, recreational value (including as a playing field), tranquility or richness of its wildlife; and c) local in character and is not an extensive tract of land.

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[129] We calculate this using 300 meters in a straight-line as being a 5-minutes' walk. 300 meters is less than the 400 meters that most people would walk in 5 minutes but takes into account that more urban journeys to a public green space are unlikely to be in a straight line.
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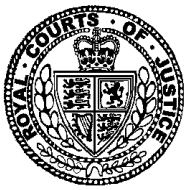

Neutral Citation Number: [2019] EWHC 2899 (Admin)

Case No: CO/1863/2019

IN THE HIGH COURT OF JUSTICE
QUEEN'S BENCH DIVISION
PLANNING COURT (LEEDS)

Date: 01/11/2019

Before :

HER HONOUR JUDGE BELCHER

- -

Between :

The Queen on the application of James Hall and Company Limited	**Claimant**
- and -	
City of Bradford Metropolitan District Council	**Defendant**
-and-	
Co-Operative Group Limited (1)	
Dalehead Properties Limited (2)	
	Interested Parties

- -
- -

Mr Killian Garvey (instructed by **Shoosmiths**) for the **Claimant**
Mr Philip Robson (instructed by **City Solicitor, City of Bradford Metropolitan Council**) for the **Defendant**

Hearing date: 22 October 2019

- -

Approved Judgment

Her Honour Judge Belcher :

1. In this matter the Claimant challenges the Defendant Council's (the "Council") decision of 28 March 2019 granting planning permission for the demolition and development of the old Haworth fire station on Station Road in Haworth (the "Site"). The development comprises the construction of an A1 food retail unit with parking and associated works (the "Approved Development"). References in this judgment to the trial bundle will be by Tab number, followed by the page number, for example [15/276].

2. I was provided with two lever arch files containing authorities, including statutory extracts and 28 cases. Prior to the hearing I had read only those parts of the authorities which I was invited to read as part of counsels' lists of essential reading. I was already familiar with some of the other authorities. At the end of counsels' submissions, they agreed that there were a number of the cases which I did not need to read prior to giving my judgment. Those were the cases in the authorities' bundle at Tabs 5, 9, 10, 12, 13, 15, 18, 20, 21, 22, 23, 25, 26, 28, 31 and 32. I was invited to read the relevant paragraphs only of the case at Tab 19, but to otherwise read the authorities in full. I confirm that I have done so. I do not consider it necessary to refer to all of those authorities in the course of my judgment, but a failure by me to mention an authority does not mean I have not read it or considered it for the purposes of this judgment.

3. The Site is adjacent to, but not within, the Haworth Conservation Area ("HCA"), and close to the Grade II listed Bridgehouse Mills. It is otherwise bordered by residential properties and railway sidings. The Claimant challenges the grant of planning permission on three grounds:

    i) that the Council's approach to the Approved Development's impact upon the HCA was flawed

    ii) that the inclusion of the tailpiece "unless otherwise agreed in writing with the local planning authority" contained in the planning conditions 3, 7, 12 and 13 was ultra vires and/or wrong in principle

    iii) that the Council failed to comply with the requirements of Paragraph 189 of the National Planning Policy Framework ("NPPF") in that the relevant Historic Environment Record ("HER") was not consulted in considering heritage impacts.

The Facts

4. In common with many planning authorities, the Defendant offers a pre-application advice service whereby future applicants can seek preliminary views and advice from planning officers. This enables a developer to receive an early indication as to whether a proposal is likely to be acceptable, and to identify any issues that need to be addressed prior to the submission of a planning application. In this case the Second Interested Party ("Second IP") was the applicant for planning permission.

5. The Second IP took advantage of the pre-application advice service. One of the Defendant's planning officers, Laura Eastwood was the officer allocated to deal with the pre-application enquiry [15/275: Witness Statement of Laura Eastwood, paragraph 3]. On 31 January 2018 she wrote a letter responding to the pre-application enquiry.

Under the heading "DESIGN/IMPACT ON CONSERVATION AREA AND HERITAGE ASSETS" that letter includes the following paragraphs:

> "There would be no objections to demolition of the existing fire station building, which is agreed to be of no heritage or architectural merit……
>
> The site is very open on all sides, any new built form will be highly visible. The site is adjacent to the Haworth Conservation Area.
>
> The site and existing buildings are not regarded as affecting the setting of the Grade II listed Haworth station building, but the proposed development would impact on views of the Grade II listed Bridgehouse Mills
>
> Officers consider that in order for any new structure on this site to complement its context, better analysis and subsequent respect for the prevailing character of Haworth is required. We would urge a bespoke design solution which should be harmonious to its context. An approach to design, materials that pays due respect to local context will be essential to satisfy policies DS3 and EN3 of the core strategy" [15/279B]

6. In support of its application for planning permission, the second IP submitted a Planning and Retail Statement ("PRS") dated June 2018, prepared by I D Planning. Section 6 of the PRS contains the Heritage Policy Assessment [5/104-108: paragraphs 6.1- 6.46]. At paragraph 6.5 the PRS states as follows:

> "As referred to above, the application site does not fall within the conservation area but its location adjacent to it suggests that the site forms part of the setting of the asset and therefore it is prudent to assess the proposal in respect of the setting of heritage assets."

7. The PRS refers to and applies the Historic England Guidance on assessing the setting of heritage assets [5/104: paragraph 6.6]. The assessment identifies four significant key views and assesses the impact on each significant key view as "negligible" [5/107: paragraphs 6.33 (which contains a typographical error, but which is clear from its context refers to significant key view 3), 6.36, 6.38 and 6.41]. The conclusions to Section 6 include the following:

> "In summary therefore the degree of harm to the conservation area and heritage assets is considered to be minimal" [5/108: paragraph 6.46]

The Claimant makes no complaint in respect of the methodology applied in the PRS.

8. As would be expected, the Council's Conservation Officer, Jonathan Ackroyd, was consulted in respect of the planning application. He has provided a Witness Statement which I shall consider later in this judgment. There is no contemporaneous

documentary record as to any advice which he gave at the time. The officer's report ("OR") to the Area Planning Panel, which was drafted by Laura Eastwood, contains the following in respect of the consultation with conservation:

> "Conservation-the site is adjacent to but not within the Haworth Conservation Area and does not affect the setting of the grade II listed station building but may impact that of Bridgehouse Mills. The existing fire station building is of no merit and though the proposed structure would be of a similar size, scale and form to that presently on the site the cladding has an overtly industrial appearance. A bespoke solution is required which is harmonious to the context" [2/18].

That wording mirrors what is set out in the pre-application response letter of 31 January 2018 (set out in paragraph 4 above). There is no other reference to heritage assets within the OR.

9. At its meeting on 28 March 2019 the Area Planning Panel approved the application and granted planning permission including the following conditions:

> "3. The use of the premises shall be restricted to the hours from 0600 to 2300, 7 days per week including bank or public holidays unless otherwise agreed in writing by the local planning authority.
>
> 7. The servicing of the site shall be carried out in accordance with the Service Management Plan submitted to and approved in writing by the Local Planning Authority and the plan shall be retained whilst ever the use subsists. The size of vehicles servicing the site shall be limited to no larger than 10.35m rigid vehicles unless otherwise agreed in writing with the Local Planning Authority.
>
> 12. Unless otherwise agreed in writing with the Local Planning Authority, prior to construction of the development, a detailed remediation strategy which removes unacceptable risks to all identified receptors from contamination, shall be submitted to and approved in writing by the Local Planning Authority. The remediation strategy must include proposals for verification of remedial works. Where necessary, the strategy shall include proposals for phasing of works and verification. The strategy shall be implemented as approved unless otherwise agreed in writing by the Local Planning Authority.
>
> 13. Unless otherwise agreed in writing with the Local Planning Authority, a remediation verification report, including where necessary quality control of imported soil materials and clean cover systems, prepared in accordance with the approved remediation strategy shall be submitted to and approved in writing by the Local Planning Authority prior to completion of the development. [1/2-4]

10. The Area Planning Panel resolved to approve the planning application pursuant to the following resolution:

> "That the application be approved for the reasons and subject to the conditions set out in the Strategic Director, Place's technical report." [3/81]

Accordingly, the resolution was to grant planning permission in accordance with the conditions found in the OR. None of the conditions in the OR contained the words "unless otherwise agreed in writing by the Local Planning Authority".

Relevant Policies

11. By Section 70(2) Town & Country Planning Act 1990, in dealing with any application for planning permission the planning authority shall have regard to the provisions of the development plan, so far as material to the application and to any other material considerations. There is no dispute that The National Planning Policy Framework ("NPPF") is a material consideration for the purposes of that Section. By Section 38(6) Planning and Compulsory Purchase Act 2004, a planning application must be determined in accordance with the development plan unless material considerations indicate otherwise. There is no dispute that this extends to the Council's Core Strategy Policy EN3, which I consider further below.

12. Part 16 of the NPPF deals with "Conserving and enhancing the historic environment". "Heritage Asset" is defined in the glossary of terms in the NPPF as:

> "A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. It includes designated heritage assets and assets identified by the local planning authority (including local listing)." [21/390]

13. Insofar as relevant, Paragraphs 189 and 190 NPPF provide as follows:

> "Proposals affecting heritage assets
>
> "189. In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary……
>
> 190. Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise. They should take this into account when

> considering the impact of a proposal on a heritage asset, to avoid or minimise any conflict between the heritage asset's conservation and any aspect of the proposal." [21/378]

14. The following further paragraphs of the NPPF, were also cited in argument and are of relevance in this case:

> "Considering potential impacts
>
> "193. When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance.
>
> 194. Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification……
>
> 196. Where a development proposal will lead to less than substantial harm to the significance of the designated heritage asset, this harm should be weighed against the public benefits of the proposal including, where appropriate, securing its optimum viable use" [21/378-379].

15. The Council's development plan includes the Core Strategy (adopted July 2017). Policy EN3 of the Core Strategy relates to the Historic Environment. Insofar as relevant, it provides as follows:

> "The Council, through planning and development decisions, will work with partners to proactively preserve, protect and enhance the character, appearance, archaeological and historic value and significance of the District's designated and undesignated heritage assets and their settings.
>
> This will be achieved through the following mechanisms:
>
> ……
>
> C. Require that all proposals for development conserve and where appropriate, enhance the heritage significance and setting of Bradford's heritage assets, especially those elements which contribute to the distinctive character of the District,..." [6/119]

It then goes on to specify a number of heritage assets contributing to the distinctive character of the District including "The literary and other associations of Haworth and conservation areas of Thornton with the Bronte family." [6/119] In the explanatory

text to the policy, designated heritage assets are defined as including, amongst other things, 59 conservation areas. [6/122].

16. There is no dispute in this case that the Site, being adjacent to the HCA, involves development which may affect the setting of a heritage asset. It is accepted, therefore, that Paragraphs 189-190 NPPF, and Core Strategy Policy EN3 apply in this case. It is also accepted that the NPPF is a material consideration for the purposes of any planning decision. It follows that the Defendant accepts that, in determining the application, the Council was under a duty to assess the impact upon the HCA, including its setting.

17. The Statement of Facts and Grounds in this case refers to Section 72(1) of the Planning (Listed Buildings and Conservation Areas) Act 1990. Mr Garvey, for the Claimant, accepts that Section applies only to land in a conservation area and, accordingly, that it has no application in this case.

Ground 1: Unlawful Approach to the Haworth Conservation Area

18. There is no dispute that the decision maker in this case was the Area Planning Panel, and not the Council officers. Further, there is no dispute that there is nothing within the main body of the OR which refers to or gives any consideration to the setting of the HCA. The only mention of the HCA was within the consultation section of the report where it is simply recorded that the site is adjacent to but not within the HCA [2/18; and set out in paragraph 7 above]. Accordingly, nowhere in the advice to members were the Area Planning Panel invited to consider the impact of the development on the HCA or its setting. There is no mention at all about heritage assets, no information about or assessment of the heritage assets and no indication of there being any duty to consider the HCA or its setting.

19. Mr Garvey submitted that there is nothing in the OR to assist the Area Planning Panel members, and, therefore, nothing at all to suggest the relevant duty was complied with. He submitted that any harm from development within the setting of a heritage asset triggers paragraph 194 NPPF. He submitted that there is a duty pursuant to paragraphs 190, 192 and 196 NPPF, firstly, to identify and secondly, to assess the impact of any harm. He relies upon the PRS prepared by the Second IP, and its conclusion that the proposed development was in the setting of the HCA and would cause minimal harm to the HCA. He submitted that evidences the need for the harm to be identified and assessed by the decision maker, namely by the Area Planning Panel. By reason of the absence of any mention of the need to identify any harm, or of the need to assess the impact of the harm and weigh it in the balance before making a decision on the application, Mr Garvey submitted that the result is that there was a complete failure to consider the impact upon the HCA. He submitted the failure to consider that impact was a clear error of law in that:

    i) the duty to consider the HCA and its setting was not discharged

    ii) the Council failed to identify and assess the particular significance of the HCA as required by paragraph 190 NPPF

    iii) there was a failure to have regard to a material consideration, namely the impact upon the HCA

iv) there was a failure properly to consider and apply policy EN3

20. Mr Garvey referred me to case law which he submitted support his submission that the planning committee must consider the issues and must make the decision as to whether there is an impact on the setting of the HCA. The first was the Court of Appeal decision in *R (oao Graham Williams) v Powys County Council* [2017] EWCA Civ 427. That case concerned, amongst other matters, whether the County Council had erred in failing to perform the duty in Section 66(1) of the Planning (Listed Buildings and Conservation Areas) Act 1990 to have regard to the desirability of preserving the setting of a listed building. Mr Garvey relied in particular on the following passages in the judgment of Lord Justice Lindblom:

> "58. There will, of course, be cases where it is quite obvious that there is no listed building whose setting is going to be affected by the proposed development, others in which it is no less obvious that the setting of a listed building will be affected, and others again where there is doubt or dispute……. Sometimes a consultee or an objector may have raised concern about the effect the development will have on the setting of a listed building but the decision maker can properly take the view that there will be no such effect, or at least no harm. On other occasions, no such concern may have been raised, but the section 66(1) duty will be engaged nevertheless. As the judge in this case recognised, the fact that the possible effect of the proposed development on the setting of a listed building has not been identified as an issue in responses to consultation, or in representations made by third parties, does not of itself relieve a planning authority of the duty. There will also be cases where only the developer himself identifies the possibility of some change to the setting of a listed building but contends either that the change would not be harmful or that the harm would be insignificant or acceptable. Depending on the circumstances, this too may be enough to engage the section 66(1) duty, and, if it does, the decision maker will err in law in failing to perform that duty.
>
> 64. The officer said nothing in her report about the application of the section 66(1) duty to the proposed development. She mentioned policy ENV14 as one of the development plan policies relevant to the proposal, and Welsh Office Circular 61/96 as relevant national policy. But she did not apply those policies to the proposal before the committee, nor explain how they were relevant……"
>
> 65. In short, nowhere in the advice the members were given on this proposal was there any mention of the listed building, or of the effect the development might have on its setting, taking into account views in which both it and the proposed wind turbine would or might be visible…..
>
> 66. In my view the lack of relevant advice from the officer and of any relevant discussion at either committee meeting, was, in

> the particular circumstances of this case, enough to amount to an error of law….
>
> 67. The first question for the county council, inherent in section 61(1), was whether there would be an effect on the setting of the listed building, and, if so, what that effect would be. This, I think, was undoubtedly a case in which that question had to be confronted in the making of the decision, and a distinct conclusion reached……. In any event, it seems to me that in this case, without that exercise having been gone through explicitly in the officer's report so as to show that the section 66(1) duty had been heeded and performed, and also without some trace of it having been undertaken by the members in their consideration of the proposal, the court can only conclude that the county council's decision-making was, in this particular and significant respect, deficient and therefore unlawful. The county council failed to discharge its duty under section 66(1), and failed also to have regard to relevant development plan and national planning policy as material considerations."

21. Mr Garvey submitted that the situation in this case is exactly the same. There is nothing in the OR to direct the Area Planning Panel to the issue of the possible impact on the heritage asset, namely the setting of the HCA. He further submitted that there is nothing from which the court could conclude that the Area Planning Panel had assessed what, if any impact, the development might have on the setting of the HCA. Further he submitted there was no evidence that any such impact had been weighed in the balance when reaching a decision on whether or not to approve the planning application.

22. Mr Garvey also referred me to the decision of Stewart J in *Obar Camden Ltd v Camden LBC* [2015] EWHC 2475 (Admin). That case involved a challenge to planning permission based, amongst other grounds, on a failure to assess heritage impact of the proposed development, both by reference to the statutory duties under the Planning (Listed Buildings and Conservation Areas) Act 1990, and by reason of failing to comply with national policy and the relevant local development plan policy, referred to in that case as CLARPA. At paragraph 14 of his judgment Stewart J dealt with the statutory duties and concluded that there was a failure to comply with the statutory duty. He then went on to deal with the NPPF and CLARPA. At paragraph 15 he stated as follows:

> "15. As to the four other points made by C, the NPPF para 128 and CLARPA both required the applicant to describe the significance of any heritage assets affected including any contribution made by their setting. Nowhere in the OR is there an assessment of the significance of the heritage assets. It is submitted by C that it is not possible to come to a conclusion about harm until an assessment has been made of the significance of the asset affected. Nor were members told that the NPPF s.12 (particularly at para. 128) required the applicant to describe the significance of heritage assets affected. D accepted that the process had become "truncated" but again emphasised that officers had come to the conclusion that there was no harm and that the committee were experienced. One

> wonders in those circumstances why there is the requirement in CLARPA and the NPPF para. 128 as stated above. The reality is, in my judgment, that these were material considerations which were not considered and therefore the decision is flawed (cf. TCPA 1990 section 70(2); Planning and Compulsory Purchase Act 2004 section 38 (6)).”

23. Counsel are agreed that Paragraph 189 of the current version of the NPPF is in the same terms as Paragraph 128 in the earlier version of the NPPF being considered by Stewart J in that judgment. Accordingly, his references to Paragraph 128 can be read as if they were references to the current Paragraph 189. Mr Garvey submitted that the same points in paragraph 15 of Stewart J’s judgment apply in this case. He asked the rhetorical question: “Why have a duty but allow the Council not to do anything to discharge it?”

24. The Council has filed Witness Statements from two of its officers, Jonathan Mark Ackroyd, Senior Conservation and Design Officer[14/270-273] , and Laura Joanne Eastwood a Planning Officer [15/274-278]. In general terms the evidence from the two officers asserts that Mr Ackroyd assessed the significance of the HCA and its setting in accordance with NPPF Paragraph 190, and concluded that there was no harm to the significance of the HCA through the impact on its setting [14/271: Witness Statement of Jonathan Ackroyd, paragraph 2; 15/277: Witness Statement of Laura Eastwood, paragraph 5]. In relation to this evidence, Mr Garvey urged caution and submitted that I should disregard it as ex-post facto rationalisation. Further, in any event, he submitted that the witness evidence is irrelevant because the officers are not the decision maker, and their conclusions on these issues are irrelevant. Mr Garvey further pointed to the fact that there is nothing before the court predating the grant of planning permission which shows that any consideration was given by the Area Planning Panel, as decision-maker, to the setting of the conservation area.

25. I do not understand Mr Robson for the Defendant to dissent from the proposition that the decision maker in this instance is the Area Planning Panel and not the officers. He submitted that experienced officers can use their professional judgement to reach the conclusion that negligible or minimal harm to the HCA does not engage the policy, and, therefore, that it does not need to be included in the OR. In those circumstances, he submitted that it was sufficient for an experienced Area Planning Panel to be directed to the NPPF and policy EN3, and to be told that the Site was adjacent to but not within a conservation area. He submitted that if the Area Planning Panel felt that was not sufficient information, they could ask for more information. He submitted that this Area Planning Panel obviously felt this was not necessary.

26. The thrust of Mr Robson’s submissions was that because the council officers formed the view that there was no harm to the setting of the conservation area, that did not need to go into the OR, and the Area Planning Panel was not materially misled in any way. He sought to draw a distinction between compliance with a statutory duty and the application of policy, and he submitted that because this case concerns the application of policy, that affects the level of detail required in an officer report.

27. As set out in paragraph 7 above, the PRS reached the conclusion that the degree of harm to the conservation area and heritage assets is considered to be minimal [5/108: paragraph 6.46]. In the Detailed Grounds this is described as a finding of no material

harm [17/301: heading to paragraph 39]. It is asserted in Paragraph 40 of the Detailed Grounds that had Mr Ackroyd disagreed with the conclusions of the PRS on heritage, he is perfectly capable of disagreeing with them but that instead he *"acknowledged"* the conclusions in the PRS. Mr Garvey submitted that the Detailed Grounds were trying to suggest that this conclusion in the PRS had been adopted by, and should be considered to be, the decision of the Area Planning Panel. Having taken instructions in response to a question from me, Mr Robson conceded that the PRS was not before the Area Planning Panel. Very sensibly, he did not seek to persuade me that the Area Planning Panel could be considered to have adopted the conclusion in the PRS as their own.

28. In my judgment, the evidence of Mr Ackroyd does not suggest that he *"acknowledged"* the conclusions in the PRS. At paragraph 2 of his Witness Statement, Mr Ackroyd states that he concluded at the pre-application stage that there was no harm to the significance of the conservation area through the impact on its setting. At that stage the Council was not in possession of the PRS which was produced by the Second IP having received the pre-application response letter from Laura Eastwood. In her evidence Laura Eastwood also asserts that she and her colleague (which I was told is a reference to Mr Ackroyd) concluded at the pre-application stage that the impact on the conservation area was not material [15/277: paragraph 5].

29. Mr Ackroyd goes on in his Witness Statement to say that having received the PRS, its conclusions were regarded as being comprehensive and agreeable. Based upon the submitted information and his own personal expertise, the Historic England guidance, adopted local policies and having regard for adopted character appraisals, he concluded that the principle of development would not harm the setting of the conservation area or the setting of the Grade II listed Bridgehouse Mills [14/272: paragraphs 4 and 6].

30. I have to say I have some concerns about the evidence of these officers in this respect. The conservation summary in the OR refers to the possible impact on Bridgehouse Mills but also asserts that the Grade II listed station building will not be affected. It seems surprising that the OR should address both things that will be affected in heritage terms and things that will not, but is silent as to the alleged conclusion reached by the officers that the HCA would not be affected. I regret that I am forced to the conclusion that there is some ex post facto rationalisation in this evidence. My view on this matter is reinforced by the approach of the Defendant's Detailed Grounds which suggest that Mr Ackroyd *"acknowledged"* the PRS findings as opposed to disagreeing with them. That is carried through from the Summary Grounds of Resistance [11/168; Paragraph 30] which were of course lodged prior to the Witness Statements being made. At that stage it was the express position that Mr Ackroyd was perfectly capable of disagreeing with the conclusions had he wanted to but **instead** (my emphasis) he "acknowledged" them. The evidence of the witnesses is at odds with the instructions which were provided for the purposes of the Summary Grounds, and that gives me cause for concern. As I have also noted at paragraph 8 above, the Conservation entry in the OR is in identical terms to the pre-application response letter, which, in the absence of any documentary evidence to the contrary, suggests that no further consideration had been given to these matters.

31. Mr Garvey attacks the Defendant's case as being confused in this respect. He submitted that in the Detailed Grounds, the Defendant was saying that it agreed with the finding of minimal harm. However, they now seek to say that their officers made a positive

finding that there was no material harm. He suggests the two things are different and irreconcilable. He submitted that the words "minimal harm" do not necessarily mean "no material harm" and that it would be wrong, indeed dangerous, for the court to say that any minimal harm can be discounted. He pointed to Paragraph 193 NPPF [21/378] which acknowledges three brackets of harm to heritage assets, substantial harm which is addressed in Paragraph 195 [21/379]; less than substantial harm which is addressed in Paragraph 196 [21/379], and no harm. Mr Garvey submitted that the Defendant is trying to say that minimal harm equates to no harm and does not need to be given any weight. Mr Garvey submitted that minimal harm (which by definition must be something more than no harm) falls to be considered within Paragraph 196 NPPF as less than substantial harm. In those circumstances, he submitted that Paragraph 193 NPPF required the Area Planning Panel to give great weight to that impact, whereas it failed to assess it, and therefore failed to give it any weight at all.

32. In response to this, Mr Robson relied upon the conclusions in the PRS which were that the impact in respect of each of the four key views was negligible [5/107: paragraphs 6.33, 6.36, 6.38, and 6.41]. Whilst acknowledging that the degree of harm in the conclusions section is considered to be minimal [5/108: paragraph 6.46], Mr Robson submitted that where the conclusions in respect of each of the key views is that the impact will be negligible, the harm can be nothing but also negligible. He submitted that the word "minimal" is interchangeable with "negligible" which is used throughout the PRS.

33. In response to that Mr Garvey submitted that the conclusion is one of minimal harm. There is nothing from the author of this document as to whether he uses the terms interchangeably. Mr Garvey made the point that whilst negligible might be less than minimal, the author's conclusion, having identified four instances of negligible impact, is that the impact overall is minimal. Mr Garvey submitted that whilst they might be one and the same, there is no evidence from which this court could properly conclude that is the case. He submitted that the category of less than substantial harm in Paragraph 196 NPPF is a broad spectrum and there is no reason why even a negligible harm should not fall within that bracket.

34. In my judgment the three categories of harm recognised in the NPPF are clear. There is substantial harm, less than substantial harm and no harm. There are no other grades or categories of harm, and it is inevitable that each of the categories of substantial harm, and less than substantial harm will cover a broad range of harm. It will be a matter of planning judgement as to the point at which a particular degree of harm moves from substantial to less than substantial, but it is equally the case that there will be a number of types of harm that will fall into less than substantial, including harm which might otherwise be described as very much less than substantial. There is no intermediate bracket at the bottom end of the less than substantial category of harm for something which is limited, or even negligible, but nevertheless has a harmful impact. The fact that the harm may be limited or negligible will plainly go to the weight to be given to it as recognised in Paragraph 193 NPPF. However, in my judgment, minimal harm must fall to be considered within the category of less than substantial harm.

35. Mr Robson sought to persuade me that in his judgment in *Blackpool Borough Council v The Secretary of State for Communities and Local Government and Thomson Property Investments Ltd* [2016] EWHC 1059 (Admin), Kerr J recognised that it was

only above de minimis harm that falls into the category of less than substantial. He based this on the following single sentence at Paragraph 48 of Kerr J's judgement:

> "This case was, moreover, one in which the parties appeared to be in agreement that this was a case where the harm to the heritage asset was less than substantial, but more than de minimis."

I do not accept that in acknowledging the parties agreement on that matter, Kerr J was intimating that in order to be less than substantial, harm to the heritage asset had to be more than de minimis. It simply amounts to an acknowledgement that the harm in that case was more than de minimis. I further note that in Paragraph 51 of that judgment Kerr J referred to the Inspector's finding that the proposals in question would "do little harm", adding that the inspector did not say they would do no harm. I do not consider this case assists Mr Robson's submission.

36. Mr Robson's alternative submission was that even if "minimal" in the PRS meant something material, Mr Ackroyd's evidence is that he disagreed with that and he formed the conclusion that the principle of development would not harm the setting of the HCA [14/272: paragraph 6]. I have already indicated that I have concerns about that evidence, but for the purposes of dealing with Mr Robson's submissions, I shall approach the matter as if the evidence was properly elucidatory only (untrammelled by any ex post facto justification) and, therefore, properly admissible.

37. Mr Robson submitted that this case does not involve statutory duty but rather policy as to how to assess the potential impact to the heritage assets. This he submitted affects the level of detail required in an OR. He submitted that having used their professional judgement that there was no harm to the HRA, the officers were entitled to reach the further judgement that the policies were not engaged. In those circumstances, he submitted, it was not necessary for there to be anything more in the OR than a reference to the policy because this is an informed committee.

38. In support of these submissions Mr Robson took me to a number of authorities. He first of all referred me to judgment of Lindblom LJ in *Michael Mansell v Tonbridge and Malling BC and Others* [2017] EWCA Civ. 1314. At paragraph 42 Lindblom LJ said this:

> "The principles on which the court will act when criticism is made of a planning officer's report to committee are well settled……. The principles are not complicated. Planning officers' reports to committee are not to be read with undue rigour, but with reasonable benevolence, and bearing in mind that they are written for councillors with local knowledge…….. The question for the court will always be whether, on a fair reading of the report as a whole, the officer has materially misled the members on a matter bearing upon their decision, and the error has gone uncorrected before the decision was made. Minor or inconsequential errors may be excused. It is only if the advice and the officer's report is such as to misdirect the members in a material way - so that, but for the flawed advice it was given, the committee's decision would or might have been different - that

> the court will be able to conclude that the decision itself was rendered unlawful by that advice."

39. Mr Robson submitted that the Area Planning Panel in this case can be expected to understand national and local policies. He pointed to list of designated heritage assets contained in the explanatory text to Policy EN3 which lists the Saltaire World Heritage site, over 2289 listed building entries on the National Heritage List for England, 59 conservation areas, 14 historic parks and gardens, 194 scheduled ancient monuments and one historic battlefield site at Adwalton Moor, Tong. Mr Robson submitted this is a Council with significant heritage assets and that the Area Planning Panel would be well used to dealing with policies covering this area of planning law. He further submitted that given Policy EN3 is referenced in the OR, it can be expected that the Area Planning Panel was well aware of its contents and how it operated.

40. Mr Robson referred me to the judgment of Sullivan J in *R v Mendip District Council, ex parte Philippe Cyprian Fabre* [2000] 80 P & CR 500, at paragraph 102 where he stated as follows:

> "It is for the committee to decide, in the first instance, whether it has sufficient information to enable it to reach a decision one way or the other. The court can review the committee's decision on Wednesbury grounds, if it considers that no reasonable committee could have reached a decision to grant planning permission without having a particular piece of information."

Mr Robson submitted that this is an experience Area Planning Panel which was directed by the OR to the NPPF and to Policy EN3, that the OR set out that the Site was adjacent to but not within a conservation area, and that if this Area Planning Panel had felt they did not have sufficient information, they could have asked for it. He submitted they obviously felt that was not necessary.

41. Mr Robson placed particular reliance on the decision of Andrews J in *Pagham Parish Council v Arun District Council and Others* [2019] EWHC 1721 (Admin). ("*Pagham*"). Mr Robson urged me that this was a case which I should read carefully on the basis that it has close parallels to the case I have to decide. Mr Robson particularly relied on Paragraphs 60 to 65 in the judgment, and he relied on these to support his submission that it was not necessary for the OR to say that the PRS thought there would be some harm to the HCA, but that the planning officers did not agree.

42. The difficulty for Mr Robson is that he has taken those paragraphs in isolation and not in the full context of the judgment in the case. The factual position in that case is completely different. In that case the applicant produced an impact assessment which identified very slight harm in heritage terms. As is clear from paragraphs 3,5 and 6 of the judgement in *Pagham*, a 52 page OR cited the relevant passages from the NPPF and expressly considered the impact that the proposed development would have on each of a number of listed buildings situated within close proximity to the application site. The OR also summarised the views of Historic England, the statutory consultee, and correctly informed the committee that the LPA's conservation officer had raised no objection. The OR then set out the planning officer's conclusions in the following terms:

> "Therefore, it is considered that the proposed development will preserve the setting of the listed buildings surrounding the site and as such would accord with policies HER SP1, HER DM1, and HER DM4 of the Arun local plan. "

The officer added

> "It should also be considered that the proposed development makes a significant contribution to the local planning authority's housing land supply and is an allocated site within the Arun local plan. Therefore, it is considered that the public benefits of the development would outweigh any harm to the setting or significance of heritage assets in accordance with paragraphs 196 and 197 of the NPPF."

43. It is quite clear from the judgment that in *Pagham* the OR expressly addressed these issues, concluded explicitly that there was no heritage harm, and undertook the assessment looking at the benefits of development weighed against any harm to the setting or significance of the heritage assets. The criticism in the judicial review in that case was that the planning officer had materially misled the committee by not adequately summarising the views of the heritage impact assessment submitted in support of the application in which the consultant had expressed the view that there would be slight harm to the setting of a listed building which could be considered less than substantial in the context of the NPPF.

44. At paragraphs 40 and 41 of her judgment, Andrews J makes the following points

> "40. The assessment of whether any harm would be caused by the impact of the development on the heritage asset or its setting is likewise **a matter for the decision maker**, not the author of the HIA……
>
> 41. The evaluation of harm was ultimately a matter for the committee, having been furnished with the necessary information by the planning officer. Thus if the planning officer, having taken all relevant factors into account, was entitled to take the view that there was no harm, and therefore that the setting would be preserved, and **so advise the committee, who accepted that advice,** on the face of it the decision is unimpeachable. It cannot be said there was a failure to comply with the duty under section 66(1) or para 193 of the NPPF because there was no harm to weigh in the balance." (my emphasis added in each case)

45. The paragraphs in the judgment which Mr Robson seeks to rely on, have to be read against that factual background and in the context of those observations made by Andrews J. The relevant parts are as follows:

> "60. Thus once it is accepted (as it was, and had to be) that it was rationally open to decide that there was no harm to the wider setting of the Church, which was the conclusion of this planning

> officer, **and implicitly endorsed by the committee when they accepted his recommendations,** there was no legal duty on anyone within the LPA to explain why they disagreed with the contrary view that had been expressed by the consultant engaged by the applicant for planning permission.
>
> 63. The planning officer did not mislead the committee, let alone mislead it in any material respect…… He was under no obligation to say that the consultant had identified something which could be regarded as minor harm to the vistas from a different perspective but that he, the officer, disagreed with that assessment.
>
> 64. The officer then said that he considered the development would preserve the setting of all the listed buildings in the vicinity. **He furnished the committee with all they information he rationally considered would help them to decide whether they agreed or disagreed with that assessment.**
>
> 65. On the basis of the material before him, having taken all relevant information into account, the planning officer was entitled to **so advise the committee**." (my emphasis added in each case)

46. In my judgment the passages I have emphasised in the judgment of Andrews J underline the very real difficulty that Mr Robson has in this case. Mr Garvey does not dispute that a planning officer is entitled to form a view on matters relevant to the decision to be made by the decision maker, and to tell the decision maker what his or her opinion on that matter is. That does not take the decision making process away from the decision maker. The decision maker is at liberty to adopt the planning officer's opinion or to reject it. The whole of Andrews J's judgment is predicated on advice being given to the committee and, by implication, being accepted by the committee. In my judgment that is entirely different from the situation here.

47. In his closing submissions in reply, Mr Garvey accepted that there is no obligation in an OR to address everything said by an applicant which the officer may disagree with. He said that if the OR before this court had done a proper assessment of heritage impact, and had concluded there was no harm, he would not be here. That would be on all fours with the case that Andrews J was considering in *Pagham.* In my judgment what has happened here, is that the officers have made the decision and, in effect, withdrawn it from the Area Planning Panel. By failing to make any mention of it in the OR, it cannot be said that the Area Planning Panel has, by implication, agreed with the conclusions of the officers. As is made clear in the judgment of Andrews J, the evaluation of harm was ultimately a matter for the Area Planning Panel, having been furnished with the necessary information by the planning officer. In this case the Area Planning Panel was furnished with no necessary information and was in no position to assess whether there was any harm, or to carry out the balancing exercise of any harm found against the public benefits of the development. In those circumstances, I am entirely satisfied that Ground 1 is made out.

48. By Section 31(2A) Senior Courts Act 1981, the High Court must refuse to grant relief on an application for judicial review if it appears to the Court to be highly likely that the outcome for the Claimant would not have been substantially different if the conduct complained of had not occurred. Mr Robson relied on Section 31(2A) both in the detailed grounds and in his skeleton argument.

49. In the course of argument, I indicated that it seemed to me inevitable that if I were to find Ground 1 proved, I would inevitably have concluded that a matter calling for a planning judgement by the Area Planning Panel had been withdrawn from them. Matters of planning judgement are matters for the decision makers and not for this court. The decision to assess whether there is any harm in heritage terms to the setting of the HCA inevitably involves a planning judgement, as does the balancing exercise to be carried out if it is found that there is some harm to place into the balance. In my judgment, I cannot properly conclude that the outcome for the Claimant in this case would not have been substantially different if the conduct complained of had not occurred. After I had given that indication, Mr Robson withdrew his reliance on Section 31(2A).

Ground 2: The Conditions Relied Upon Were Unlawful.

50. This challenge relates to the addition of the words "unless otherwise agreed in writing" (the tailpieces) in each of conditions 3,7, 12 and 13 of the conditions attached to the planning permission [1/2-4]. Mr Garvey submitted firstly, that the addition of these words was ultra vires, and secondly, that they are wrong in principle.

51. The Summary Grounds in this case were accompanied by a Witness Statement from Mark Julian Hutchinson, Area Planning Manager for the Defendant. In that Witness Statement he confirms that the OR to the Area Planning Panel did not include the tailpieces, that no further material came to the attention of the LPA between the Area Planning Panel's resolution and the issuing of the decision notice. He states that it was a simple administrative oversight that resulted in the tailpieces being added to conditions 3, 7, 12 and 13. [11/183, paragraph 7]. In those circumstances, it is clear that the tailpieces are ultra vires having been added without any decision from the Area Planning Panel to support their inclusion.

52. Mr Robson accepted the unlawfulness of these conditions, and addressed me only on the issue of the appropriate form of relief. He referred me to the decision of Ousley J in *R (oao Midcounties Co-operative Ltd) v Wyre Forest District Council* [2009] EWHC 964 (Admin), at paragraph 74, where he rejected a submission that the tailpieces in that case should lead to the quashing of the whole planning permission. He found that severance of the offending tailpieces was sufficient.

53. Given my conclusions on Ground 1 which will lead to the quashing of this planning permission, I do not consider it necessary to go into any detail on the issue of relief the Ground 2. In any event, Mr Garvey reserved his submissions on relief pending my decision on the other Grounds. Whilst I have not heard those submissions, it would appear that if only the tail conditions were in issue, then excision would seem to be the appropriate remedy.

54. Given the Defendant's concession that the conditions are unlawfully included, I do not consider it necessary to explore the alternative challenge as to whether they are wrong in principle.

Ground 3: Failure To Have Regard To The Relevant Historic Environment Record

55. Given my conclusion in relation to Ground 1, I can deal with Ground 3 shortly. Paragraph 189 NPPF [21/378; and set out at paragraph 13 above] provides that in undertaking the heritage asset assessment, as a minimum the relevant HER should have been consulted and the heritage assets assessed using appropriate expertise where necessary. There is no dispute that the HER was not consulted in this case.

56. Mr Robson submitted that the fact that the HER has not been consulted is of no substantive consequence in this case. He relies upon Mr Ackroyd's evidence:

> "It was not felt necessary to refer to the Historic Environment Record as the applicant's statement was assessed as having properly identified and considered the heritage impacts in more detail than is included in the Historic Environment Record." [14/272: paragraph 5]

I have already indicated that I have concerns that the officers' evidence in this case does amount to ex-post facto rationalisation. There is nothing in the paperwork to suggest that this was even considered by Mr Ackroyd prior to the grant of the planning permission in this case.

57. That would not necessarily be the end of Ground 3 as Mr Robson submitted that there is no evidence that any failure to consult the HER was of any consequence to the final decision. Mr Robson told me that the HER is simply a database. When I pointed out that there was no evidence to that effect, Mr Robson submitted that the HER is a public document which the Claimant could have put before the court. That may be right, but equally the Defendant could put this document before the court, and it is the Defendant who is seeking to argue that the failure to consult the HER is of no consequence. The Claimant's case clearly raises an issue which needs to be answered. It has not been, save by the evidence of Mr Ackroyd which, for reasons I have already given, I do not regard as sufficient.

58. In the absence of the HER having been produced in evidence, or even any evidence from an officer as to what the HER comprises, I am left with Mr Robson telling me, on instructions, that the HER is simply a database. I have no information as to what is in that database and nothing from which I could properly make any judgment as to whether the failure to consult the HTR is of no consequence to the final decision. It follows that I could not properly conclude that it is highly likely that the outcome for the Claimant would not have been substantially different if the HER had been consulted. Accordingly, Section 31(2A) Senior Courts Act 1981 has no application to this Ground of challenge. Accordingly, I find Ground 3 is also proved.

59. To summarise my conclusions, I find all three Grounds proved. I think it likely that had Ground 2 been the only successful ground, the appropriate relief would have been excision of the tailpieces, although I would have heard further submissions from Mr

Garvey as to relief in those circumstances. However, given that Grounds 1 and 3 are proved, it follows that the planning permission in this case must be quashed.

[redacted]
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[redacted]

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24 June, 2013

Dear Caroline,

Further to our telephone conversation and my email of today, I am pleased to enclose the house-to-house photographic survey of the Redington Frognal Conservation Area. The photos were taken in summer 2011 (not 2012 as I stated in my email). The other CD contains the presentation which we prepared some time ago, setting out the need for Article 4 Directions here.

Thank you again for all your help.

Yours sincerely,

Nancy Mayo
Minutes Secretary

Redington Frognal Association
http://www.redfroghampstead.org/redfrog-biodiversity-survey.html

THE HEATH AND HAMPSTEAD SOCIETY ON BEHALF OF ISSUE 7/68
REPRESENTOR 68 - REDINGTON FROGNAL ASSOCIATION

Key aims of the Society and the Association are to protect Hampstead from poor quality development that detracts from the area.

For many years, we have examined all Planning Applications relating to the area and assessed them for their impact on conservation and on the local environment.

During the evolution of the production of the current Draft Local Plan we made written comments regarding the plan followed by meetings with Councillors and those Officials involved.

HEARING STATEMENT - TO INSPECTOR of CAMDEN`S DRAFT LOCAL PLAN - 20th to 25th SEPT 2016

BASEMENTS UNDER GARDENS - POLICY A5

The importance of the large number and size of gardens in contributing to the area's special character and biodiversity is stated and defined in the Hampstead and the Redington Frognal Conservation Area Statements.

These gardens have many mature trees, are adjacent to and contribute to the verdant openness of Hampstead Heath, are part of the ecological and green corridors spreading from the Heath and contributing to biodiversity.

Many gardens are significantly large.

They also frequently contribute to the setting of the many listed buildings and the many buildings which contribute to the quality of the Conservation Area.

Developers will quickly exploit any opportunity to build under (or on) these gardens. Already some large gardens have been lost, frequently with crowded developments of small detached houses (with small gardens) causing dramatic diminution of the very special well-treed Conservation Area - e.g. Cannon Lane and Well Road.

The construction of basements under these gardens inevitably leads to the loss of many mature trees - the product of many generations of growth. Such mature trees are irreplaceable. Once a garden has been significantly lost to a basement, future owners will never be able to grow trees in their garden if they wish to. The 1 metre of soil depth suggested over new basements imposes a heavy load on the basement structure and so usually carries only bushes, grass or hard paving – hence the need to allow sufficient space around basements for large trees to grow now and/or in the future.

THE 50% RULE
The derivation of a limit of 50% on the proportion of a garden which may be lost to a basement is unclear - it appears to be an arbitrary figure - too generous for even small urban gardens. We suggested to Camden during the consultation period of the Draft Local Plan that it should be possible to protect large gardens together with suggestions about how this might be done.

We believe that our area is not alone here, and request the following to apply to the whole of Camden.

a) We would prefer that the maximum limit for **all** gardens in Camden should be stated as "**in exceptional circumstances up to 25%, or, alternatively extended 3 metres beneath the garden measured from the original House – whichever is the less."**

GARDENS IN CONSERVATION AREAS

In addition: we suggest that it is essential that:

b) the ban on basements under gardens of Listed buildings be **extended to all gardens in Conservation Areas in which gardens contribute to the quality of the area.**

Therefore we suggest that the following clauses in the Draft Local Plan be amended:

d) Clause 6.143 Last sentence should be omitted (Basements may be permitted under large gardens of Listed buildings ....etc.), and in addition - the heading for this Clause should be amended to:

> "Gardens of Listed Buildings and gardens in Conservation Areas": so that - "no basements will be permitted under Gardens of Listed Buildings or gardens in Conservation Areas which could contribute to the quality of the area."

For the sake of clarity and to prevent misinterpretation of the guidelines we also suggest that:

e) Clause 6.141 The minimum dimension of the boundary margin left for trees should be stated. We request a minimum of 2 metres for side boundaries which would allow the future growth of a tree of up to 332mm trunk diameter according to BS5837:2012 provided there is at least equal space in the neighbouring garden. For rear boundaries where visually important, mature or veteran trees, historic tree lines or a green corridor supporting wildlife foraging and commuting are involved (with the onus on the developer to provide independent verification that such wildlife foraging and commuting corridors are not present) this should be 15 metres[1].

f) Clause A5 (d) A clear definition of what is meant by "garden area" is required - presumably not "site area less building foot-print" **but e.g. "the private enclosed amenity area, usually at the rear of the building."**

[1] This is supported by English Nature's 'Standing Advice for Ancient Woodland and Veteran Trees' (2014) for veteran trees, and would support our wish to make provision for the mature trees that are characteristic of our Conservation Areas to become the veterans of tomorrow, and to preserve gardens for future generations and for biodiversity.

Policy A3 Biodiversity

As the climate changes, all green spaces, including private gardens are becoming increasingly vital to wildlife and people. They provide shade, absorb carbon, soak up flood water and help to cool buildings. A well-managed network of gardens stretching across Camden will also help wildlife to move more freely and adapt to climate change.

There is an urgent need to restore and maintain ecological networks and to provide potential foraging, roosting and nesting sites. Camden seeks to strengthen existing green infrastructure and wildlife corridors, to provide new green/habitat infrastructure and wildlife/habitat corridors and connectivity and movement around the corridors.

Individually and in groups, rear gardens provide particularly diverse and attractive habitats for wildlife. Adjoining rear gardens, with their trees and hedges, form important green/habitat corridors and Core Sustenance Zones[2]. At ground level and above, they have the potential to provide ecological connections, enabling species to move along green / habitat corridors. For example, hedges create cool, shady places in what might otherwise be a hot, exposed site; mixed hedgerows provide food, nesting places and shelter for birds and mammals; ornamental meadows with a large number of flowers can provide both beauty and biodiversity value for their symbiotic association with specialist invertebrates and through their seed and nectar.

Trees, particularly native species, are important for lichens, invertebrates, fungi, bats, mammals and birds, with veteran native trees of special value for the rarer species of invertebrates and fungi associated with them. Trees with tall canopies in close proximity are particularly important as safe foraging routes for bats[3], and movement corridors (including to expand the gene pool of arboreal invertebrates unable to fly).

The value of the Camden's green habitat corridors is being compromised by planning consents for rear garden buildings, property extensions and basements, which almost invariably lead to hedge and tree fellings, including of important mature trees.

An analysis of consented planning decisions within the Redington Frognal Conservation Area between 2010 and June 2016[4], indicates that Camden granted the following consents, to the detriment of biodiversity and green infrastructure:

- for building extensions: 218, of which:
  - 158 resulted in take-up of rear gardens
  - 50 led to the disappearance or reduction of front gardens
  - 30 caused losses to side gardens, compromising views from the street of rear gardens and greenery
- for the creation of, or extensions to, hard-surfaced front-garden parking areas: 63

[2] London Wildlife Trust "Spaces Wild", page 10

[3] A bat monitoring exercise by Dr Greg Carson of the Ecology Network found bats to be present throughout the Redington Frognal Conservation Area in May 2016. Report and Redfrog Anabat results are attached.

[4] Redington_Frognal_extensions_2010-2016.xlsx

- for rear garden outbuildings, ranging from a dog grooming salon and yoga studio to swimming pools, air conditioning plant and terracing / decking: 49

Such planning applications additionally resulted in the felling of a very large number of trees. For example, consents granted[5] to excavate a total of 80 basements, caused 307 trees and a number of hedgerows to be felled. These were almost invariably felled to facilitate development.

The Redington Frognal area, in common with other Conservation Areas, has suffered an unsustainable cumulative loss of soft surface (i.e. the loss cannot be reversed with current legislative powers), trees and hedges, and an attendant loss of biodiversity and green infrastructure.

We should like Camden to address this loss of biodiversity and soft landscape through the following suggested additions and amendments, including the adoption of the Camden Biodiversity Action Plan as Supplementary Planning Guidance.

Clause 6.65. This should be clarified. Instead of seeking the provision of new natural greenspace within the site, there should be a requirement to quantify the area (square metres) of soft green landscape prior to the development and post development, in order to demonstrate and quantify the gain to be achieved.

Clause 6.67. Development typically pays lip service to this clause, introducing bat and bird boxes while destroying habitat. Instead, we should like to see a commitment to include the planting of a proportion of trees which are capable of supporting significant numbers of invertebrates and lichens, hedgerows that include native species and wildflower areas.

Clause 6.74 The phrase "Core Sustenance Zones" to be incorporated
" Trees and vegetation are integral to the amenity and character of the street scene, provide connections and habitat for wildlife **and are integral to Core Sustenance Zones**

Clause 6.79 The phrase wildlife foraging and commuting corridors to be inserted:

Where the loss of trees or vegetation of value, **including to wildlife foraging and commuting corridors,** cannot be avoided or would adversely affect their future growth, the Council will require suitable replacements capable of providing at least equal amenity**, wildlife foraging, wildlife commuting** and ecological value. Where this cannot be achieved on-site, the Council will require a financial contribution towards re-provision.

This should also include an express requirement for the replanting of a number of trees equal to or greater than the number felled, a proportion capable of supporting significant numbers of invertebrates and lichens, and a requirement to replant, and provide maintenance for five years, if any of these trees do not prosper during the first five years following their planting.

[5] mostly between 2010 and June 2016

Clauses 6.80 and 6.81 Instead of a "right tree for the right site approach: we would favour a requirement for arboricultural reports to assess trees according to their ability to support invertebrates and lichens, as in the attached research paper (copyright Ofwell Wildilfe Trust), as well as their visibility from the street and Conservation Area amenity and impact:
http://www.countrysideinfo.co.uk/woodland_manage/tree_value.htm
and: Alexander, A., Butler, J. and Green, T. (2006) 'The value of different tree and shrub species to wildlife'. British Wildlife 18(1): 18 - 28

Conservation Areas

Clause 7.42. Conservation Area appraisal and management strategies to be adopted as Supplementary Planning Guidance.

Conservation Area Advisory Committees to be provided with feedback on how their input has informed or influenced Camden's planning decision.

Transport

Aggregated data from OFSTED and the Independent Schools Inspectorate indicate that the NW3 area accommodates 12,500 pupils, mostly at independent schools. This has given rise to the area being known locally as an "education park". The schools have large catchment areas, extending across several local authority areas and School Travel Plans are not enforced. The combination of school run and commuter traffic contributes to traffic volumes of 9,300 vehicles daily just using Fitzjohn's Avenue in a southbound direction[6].

An illegal parking free-for-all currently operates, as parents simply put a handwritten note in the window of their car saying they are collecting a child from school. Camden admits that it has no clear policy on how long a parent can leave a car unattended to drop/collect a child at school and, combined with the aggression of school run drivers, wardens virtually never patrol the area at the key time, let alone issue a PCN.

As part of **Policy T1**, Camden should include a commitment to patrol parking in the vicinity of schools, on a regular basis during the key hours of the school run, and to enforce a clear policy of penalising illegal parking by school-run drivers.

[6] Church Row submission to TfL 3.3.16 "*School run traffic*", page 3

Supporting Evidence

Policy A3 Biodiversity

Paragraph 3: importance of Core Sustenance Zones:

Page 10 of London Wildlife Trust "Spaces Wild"

CONNECTING SPACES

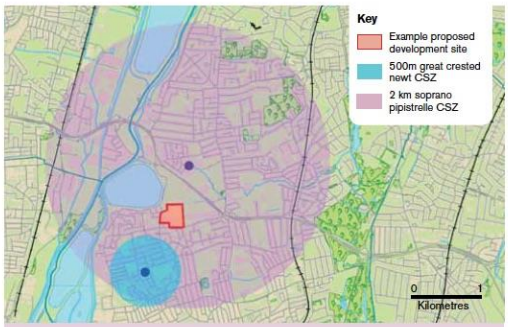
BATS

Bats are highly mobile species that use the landscape intensively for foraging, roosting and commuting. In cities, where green spaces are smaller and more fragmented, they need to commute from their roosts in buildings to suitable foraging areas. Research indicates that in order for a bat roost to survive bats need to have access to foraging within a core distance from their roost. This core foraging area (the Core Sustenance Zone - CSZ) provides the food that bats need to feed their young without having to commute large distances. Loss or reduction of this foraging area could therefore result in a loss of a roost.

Foraging areas within the CSZ are often not known, nor given adequate protection; very many are likely to fall outside a SINC. When assessing planning proposals, it is common practice to determine the importance of a site based on the species recorded there. However, the absence of a record does not mean that the site is not used by a species, particularly mobile and difficult to record animals such as bats. For example, land beside Fortismere School in Haringey is a small open space, mostly woodland which has developed from overgrown landscaped grounds, with two small lined ponds which support limited aquatic vegetation. It is designated as a Local SINC, although a significant proportion of it has been redeveloped to accommodate the school.

Despite no roosting bats being recorded on the site it is an important foraging resource for bats roosting in the local area. Further development of it could result in an adverse impact on the local bat population.

brown long-eared bat © Hugh Clarke



When trying to identify impacts of development the current system is a 'one size fits all' approach; assessments will only seek out records of key species within 1km of the development boundary. This is often not appropriate for highly mobile species such as bats. All species have an area that they most regularly use to find food, known as a CSZ. For most ground-dwelling species - such as slow-worm or great crested newt - the extent of the CSZ may be no more than 500m across, but bats will regularly fly up to 2km from their roost. The map above shows how the CSZ approach would look; the development site (red) does not impact upon the CSZ of a great crested newt colony but is within the CSZ of a soprano pipistrelle bat. Using this approach changes the decision-making process for this site by identifying that habitat requirements for a bat might need to be addressed within a development proposal. This type of desk survey is recommended as best practice, however it is only requested in around 1% of planning cases. The complete lack of information may constitute a more pressing issue than the current search area.

Broken links in the chain

Maintaining SINCs as the key nodes of a wider network is critical to maintaining the ecological health and functionality of the wider green space network – including the large area of London occupied by gardens. No individual site functions as effectively in isolation as it does in being connected to a much larger network of sites; and the fact that sites being lost or degraded in ecological quality will increase the impacts of fragmentation. Many mobile species rely on a number of sites and/or habitats within their lifecycles, ideally adjacent to each other, connected via suitable green corridors or within close proximity.

Paragraph 4 Importance of rear gardens and trees to habitat corridors

Page 20 of Ecology Network Bat Report for Redington Frognal Neighbourhood Forum

10. Conclusions

10.1. The ubiquitous presence of common and soprano pipistrelle suggests that the gardens within the Redington - Frognal area provide a significant commuting and foraging resource for bats.

10.2. Where the gardens 'coalesce' into an extensive green corridor, which is also close to the Heath, there appears to be a greater potential for bat roosts / activity.

10.3. Larger bats are active within the Redington - Frognal area, but their distribution is less clear.

10.4. It appears that the roost within the horse chestnut at 9 Kiddepore Avenue may not be active, but this would need to be confirmed with a dedicated survey.

Paragraph 6: Granted planning consents for building extensions and garden building leading to loss of soft-surfaced garden area by street, 2010 – June 2016

	Rear garden	Side garden	Front garden	Total gardens affected	Net change in residen-tial units
Arkwright Road	7	2	2	11	
Bracknell Gardens	5	1	1	7	
Briardale Gardens	6		1	7	
Chesterford Gardens	4	1	2	7	-1
Clorane Gardens	5	2		7	
Ferncroft Avenue	2	2	2	6	
Finchley Road	2			2	
Frognal	10	2	2	14	2
Frognal Close	2	1		3	
Frognal Lane	3			3	
Greenaway Gardens	7	1	2	10	
Heath Drive	7	6	3	16	
Hollycroft Avenue	10	2		12	-1
Kidderpore Avenue	1			1	
Kidderpore Gardens	3	2	3	8	-1
Langland Gardens	2		2	4	
Lindfield Gardens	4		1	5	
Oakhill Avenue	4	4		8	1
Platt's Lane	9	4		13	
Redington Gardens	1			1	
Redington Road	35	12	5	52	-1
Rosecroft Avenue	8		3	11	
Telegraph Hill	4			4	
Templewood Avenue	9	5	1	15	-4
Templewood Gardens	1	1		2	
West Heath Road	7	2		9	
Total	**158**	**50**	**30**	**238**	**-5**

Source: Redfrog based on Socrata from LB Camden

Redington_Frognal_extension_2-1—2016.xlsx
This is appended to the email

Paragraph 7: Granted consents to excavate a total of 80 basements, caused 307 trees and a number of hedgerows to be felled

Granted Redfrog Basement Consents, 2010 - June 2016

Street	Basements excavated	Trees felled	
Arkwright Road	3	0	
Bracknell Gardens	5	9	
Briardale Gardens	1	0	
Clorane Gardens	1	0	
Ferncroft Avenue	10	2	
Finchley Road / KA	1	22	
Frognal	2	1	
Frognal Close	1	0	
Frognal Lane	1	1	
Greenaway Gardens	4	20	
Heath Drive	7	8	
Hollycroft Avenue	4	3	
Kidderpore Avenue	6	73	
Kidderpore Gardens	2	4	
Langland Gardens	2	3	8 at risk
Lindfield Gardens	1	0	
Oakhill Avenue	5	6	
Platt's Lane	2	0	
Redington Gardens	5	6	
Redington Road	8	12	
Rosecroft Avenue	2	4	
Telegraph Hill	0	0	
Templewood Avenue	6	95	
West Heath Avenue	1	38	
TOTAL	**80**	**307**	

Source: Redfrog based on Socrata from LB Camden

Clauses 6.80 and 6.81 Arboricultural reports to assess trees according to their ability to support invertebrates and lichens

The Value of Different Tree Species for Invertebrates and Lichens

The Value of Different Tree Species for Invertebrates and Lichens

The table below shows the number of insects and epiphytic (growing on plants) lichens which have been recorded in association with common trees and shrubs in Britain. The figures in brackets include mite species as well as insects.

Tree or Shrub	Associated Insect Species	Associated Lichen Species
Oak (pedunculate & sessile)	284 (423)	324
Willow species	266 (450)	160
Birch (silver & downy)	229 (334)	126
Hawthorn	149	no data
Blackthorn	109	no data
Poplar species (including aspen)	97	no data
Crab Apple	93	no data
Scots Pine	91	132
Alder	90	105
Elm	82	187
Hazel	73	160
Beech	64 (98)	206
Ash	41	255
Spruce*	37	no data
Lime	31	83
Hornbeam	28	44
Rowan	28	125
Field Maple	26 (51)	93
Juniper	20	no data
Larch*	17	no data
Fir*	16	no data
Sycamore*	15	183
Holly	7 (10)	96
Sweet Chestnut*	5	no data
Horse Chestnut*	4	no data
Yew	4	no data
Walnut*	4	no data
Holm Oak*	2	no data
Plane*	1	no data
Rhododendron*	0	no data

*** Introduced Species**

Transport Policy T1

Volume of school-run traffic

Page 3 of School-Run Traffic Submission to TfL by Church Row Residents

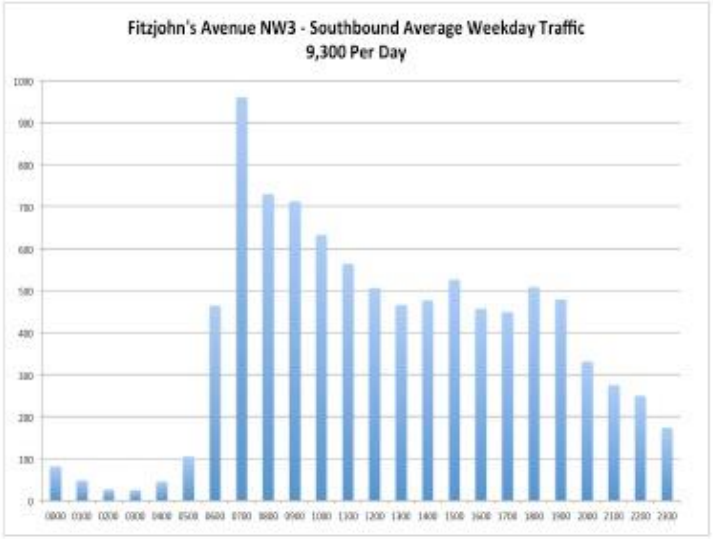
Fitzjohn's Avenue and Hampstead Village

TfL's consultants accept that the proposals will have an adverse impact on traffic in Hampstead Village and the surrounding area.

> *"In the vicinity of Swiss Cottage the removal of the one-way system is likely to cause some vehicles to reassign onto local roads in both the morning and evening peak. In the morning peak, due to reduced capacity our modelling suggests there will be reduced flow along Fitzjohn's Avenue and Belsize Avenue leading into College Crescent and through Swiss Cottage. As a result there is an increase of traffic through the Hampstead and Belsize Park area particularly on Agincourt Road, Arkwright Road, Fleet Road and Parkhill Road, in the morning. Other roads that have been indicated which may be affected are West Heath Road and Hampstead High Street. To the West of Swiss cottage there is predicted to be some increase in traffic on Loudoun Road, Fairfax Road and Goldhurst Terrace. There is also likely to be additional queuing on both Adelaide Road and Hillgrove Road on the approaches to Finchley Road."*

The adverse impact is caused by (i) the replacement of the disliked but flexible gyratory system, with a system that has (ii) "no left" hand turn from Finchley Road into College Crescent (iii) "no left" and "no right" hand turns out of College Crescent; (iv) a compression of traffic into Finchley Road with restrictive traffic light sequencing. The above actions is effectively a partial closure of College Crescent / Fitzjohn's Avenue that will cause traffic to back up into Hampstead.

TfL's current analysis does not take account of NW3's 12,500[1] pupils and the associated Fitzjohn's Avenue school run (see March 2015 chart - showing 9,300 vehicles using Fitzjohn's Avenue daily – Source Camden Council). The College Crescent restrictions mean that children being delivered to South Hampstead School for Girls (902 pupils) from North London will no longer be able to access Fitzjohn's Avenue from Finchley Road and will have to drive through Arkwright Road and down Fitzjohn's Avenue. South Hampstead is just one NW3's fifty-five local schools, which might be better thought of as an "Educational Park".



[1] Source: aggregated OFSTED and ISI school reports.

05 Sep 2017

What is a Root Protection Area and what does it mean?

Jill Butler
Conservation adviser

A root protection area is usually an arbitrarily calculated area which is intended to avoid damage to the tree's root system immediately under and just beyond the crown.

It is most commonly associated with planning applications but is also applicable in agricultural and forestry situations.

Root Protection Area is defined as a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.

Planning applications and trees

In the UK, all trees are a material consideration in planning. Local planning authorities need to understand the impacts of a proposed development on any trees present.

A British Standard has been developed for use in providing information to local planning authorities.

"British Standard 5837: Trees in relation to design, demolition and construction – recommendations".

British Standards can be purchased or may be available to see in local planning authority offices.

Explore our resources for planners.

Tree roots can extend more than twice as far as the crown radius.

Credit: Jane Corey / WTML

How is a root protection area calculated?

The British Standard 5837, RPA is calculated by multiplying the diameter of the tree at breast height in metres by 12, but is capped as an area with a radius of 15m.

How far do roots spread?

Little research has been done into the extent of root systems, but it's clear they extend well beyond the crown drip line (Perry, 1982). It may be as much as seven times the crown area or 2.5 times the crown radius.

Tree roots are primarily in the top 30cms because further down in the soil, oxygen becomes more limiting and roots need to respire. Unfortunately, the area does not usually take into account the extent of the mycorrhizal (fungus-root) fungi directly associated with the fine roots.

Mycorrhizae

Beyond the end of the root system the tree uses a complex network of fungi to gather more nutrients. Mycorrhizal fungi attach to the roots of the tree. In return for the nutrients from the fungi, the tree gives sugars to the fungi.

Sometimes the fungi can be seen as the fruit bodies which appear beyond any calculated root area extent. Even then the extent of the mycorrhizal fungi is not clear, as fruit bodies are produced some way back from the front of the hyphal system.

Trees put enormous demands on their underground support systems. Roots and their associated mycorrhizal fungi supply nutrients and water to the tree. During transpiration, trees need many litres of water on a daily basis – as much as 220 litres for an oak tree in summer.

Bigger root protection areas are needed

Along with the **Ancient Tree Forum**, we have always proposed an area greater than the existing RPA for very special ancient and veteran trees. For very important trees this would be calculated as an area with a radius which is 15 times the diameter of the tree at breast height which is not capped, or 2 metres beyond the crown whichever is the greater.

More recently, there has been a discussion of using non-invasive root radar and root tomography to establish the extent and condition of ancient tree roots so as to be sure the RPA is minimising the impacts to these trees in particular.

PROTECTING TREES AND WOODS

Campaign in your community

Local communities taking action is the most effective way to protect woods and trees. Need help? Check out our useful resources.

PROTECTING TREES AND WOODS

Tree Preservation Orders

A Tree Preservation Order (TPO) protects specific trees or a particular woodland from deliberate damage and destruction.

TREES WOODS AND WILDLIFE

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BRITISH STANDARD

BS 5837:2005
Incorporating Corrigendum No. 1

Trees in relation to construction — Recommendations

ICS 65.020.40; 91.020

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee B/213, Trees, upon which the following bodies were represented:

Arboricultural Association
Institute of Leisure and Amenity Management
Institution of Civil Engineers
Institution of Structural Engineers
Landscape Institute
National House-building Council
ODPM — Wildlife and Countryside Directorate
Royal Institute of British Architects (RIBA)
Co-opted members

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 26 September 2005

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Amendments issued since publication

Amd. No.	Date	Comments
15988 Corrigendum No. 1	September 2005	To correct second equation in Table 2, and minor errors in 5.2.4, 11.3.1 and 15.1.5

The following BSI references relate to the work on this standard:
Committee reference B/213
Draft for comment 04/30089945

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Contents

Foreword

This British Standard has been prepared by Technical Committee B/213. It supersedes BS 5837:1991 which is withdrawn.

This revision has been found to be necessary to take account of current practice regarding planning for the management, protection and planting of trees in the vicinity of structures, and for the protection of structures near trees.

This standard provides recommendations and guidance for arboriculturists, architects, builders, engineers, land managers, landscape architects and contractors, planners, statutory undertakers, surveyors, and all others interested in harmony between trees and construction.

It has been assumed in the drafting of this British Standard that the execution of its provisions is entrusted to competent people (see Clause **2**).

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Attention is drawn to the following statutory regulations: the Town and Country Planning Act 1990 (as amended) [1], the Forestry Act 1967 (as amended) [2], the Wildlife and Countryside Act 1981 (as amended) [3], the Conservation (Natural Habitats etc.) Regulations 1994 [4], the Countryside and Rights of Way Act 2000 [5], the Hedgerows Regulations 1997 [6], the Construction (Design and Management) Regulations (CDM) [7] and the Environment Act 1994 (as amended) [8].

Annex A provides guidance on aspects of trees and the law.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 32, an inside back cover and a back cover.

1 Scope

This British Standard gives recommendations and guidance on the principles to be applied to achieve a satisfactory juxtaposition of trees, including shrubs, hedges and hedgerows, with structures. It follows, in sequence, the stages of planning and implementing the provisions which are essential to allow development to be integrated with trees.

This standard recognizes that there can be problems of development close to existing trees which are to be retained, and of planting trees close to existing structures. This standard sets out to assist those concerned with trees in relation to construction to form balanced judgements. It does not set out to put arguments for or against development, or for the removal or retention of trees. Where development, including demolition, is to occur, the standard provides guidance on how to decide which trees are appropriate for retention, on the means of protecting these trees during development, including demolition and construction work, and on the means of incorporating trees into the developed landscape.

NOTE A list of organizations from whom additional advice can be obtained is given in Annex B. The Bibliography contains details of publications referred to throughout this document. Other relevant publicly available documents are also listed.

2 Terms and definitions

For the purposes of this British Standard, the following terms and definitions apply.

2.1
arboriculturist
person who has, through relevant education, training and experience, gained recognized qualifications and expertise in the field of trees in relation to construction (see Annex B and the Foreword)

2.2
competent person
person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached (see Foreword)

NOTE 1 A competent person understands the hazards and the methods to be implemented to eliminate or reduce the risks that can arise. For example, when on site, a competent person is able to recognize at all times whether it is safe to proceed.

NOTE 2 A competent person is able to advise on the best means by which the recommendations of this British Standard may be implemented.

2.3
structure
man-made object, such as a building, carriageway, path, wall, services, and built and excavated earthworks

2.4
veteran tree
tree that, by recognized criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned

2.5
root protection area (RPA)
layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree, shown in plan form in m^2

2.6
tree constraints plan (TCP)
plan prepared by an arboriculturist for the purposes of layout design showing the RPA and representing the effect that the mature height and spread of retained trees will have on layouts through shade, dominance, etc.

2.7
construction exclusion zone
area based on the RPA (in m^2), identified by an arboriculturist, to be protected during development, including demolition and construction work, by the use of barriers and/or ground protection fit for purpose to ensure the successful long-term retention of a tree

2.8
tree protection plan (TPP)
scale drawing prepared by an arboriculturist showing the finalized layout proposals, tree retention and tree and landscape protection measures detailed within the arboricultural method statement (AMS), which can be shown graphically

2.9
arboricultural implications assessment (AIA)
study, undertaken by an arboriculturist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal

2.10
arboricultural method statement (AMS)
methodology for the implementation of any aspect of development that has the potential to result in loss of or damage to a tree

NOTE The AMS is likely to include details of an on-site tree protection monitoring regime.

2.11
services
any above ground and piped and/or ducted underground infrastructure including water main, electricity supply, gas supply, fibre-optic utilities, telecommunications cabling, storm and foul water drainage, including temporary storage for run-off, pumping stations, interceptors and other allied buried structures

2.12
special engineering
design of a structure with the physiological requirements of trees as the priority

3 Strategy

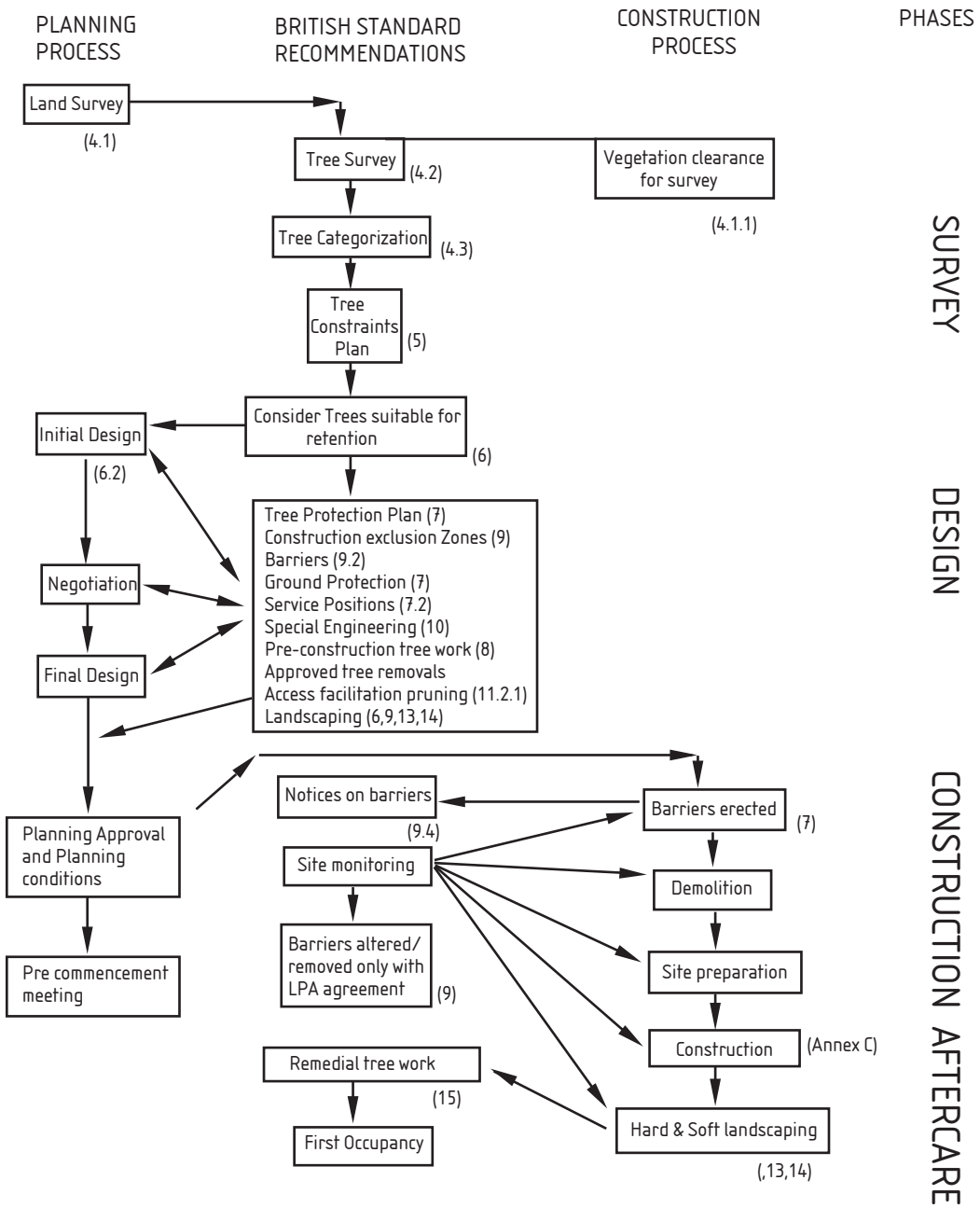
3.1 General

3.1.1 Trees can occupy a substantial part of a development site and because of their potential size can have a major influence on the planning and use of the site. Existing trees of good quality and value can greatly enhance new development, such as by providing an immediate appearance of maturity. However, trees can also be a constraint. Layouts sited poorly in relation to retained trees, or the retention of trees of an inappropriate size or species may be resented by future occupiers and no amount of legal protection will ensure their retention and survival. To avoid such problems and to ensure a harmonious relationship between trees and structures, careful planning and expert advice is needed on their juxtaposition.

3.1.2 A tree may take a century to reach maturity but it can be damaged or felled in a few minutes. Such damage is frequently caused unwittingly because of failure to appreciate the vulnerability of trees, particularly the root system (see Annex C), and how easily and often insidiously they can be damaged. Irreparable damage is frequently done to existing trees in the first few days of a contractor's occupation of a site. The early erection of tree protection to form the construction exclusion zone before works commence on site is essential as the only way to prevent damage being caused to retained trees by operations in their vicinity.

3.2 Implementation

3.2.1 This British Standard provides guidance for a balanced approach on deciding which trees are appropriate for retention, on the effect of trees on design considerations and on the means of protecting these trees during development. This involves a logical sequence of events summarized as a flow diagram (see Figure 1) that has tree care at the centre of the process. Pre planning site discussions involving all parties are recommended.



Figures in brackets refer to Clause numbers.

Figure 1 — Flow diagram, summarizing planning for trees on development sites

3.2.2 The layout of this standard follows the sequence of the flow diagram in Figure 1. Following the land survey (see **4.1**) the existing trees on and adjacent to the site should be surveyed (see **4.2**) and categorized (see **4.3**). The constraints these trees pose should be plotted on a tree constraints plan (see Clause **5**) and those selected for retention should be plotted on a tree protection plan as a result of the negotiations within the design process (see Clause **7**). Areas for new landscaping should be identified at this time (see **6.2.2**). The position of all excavations and any special engineering required can be specified in the form of arboricultural method statements. Once work is due to begin on site the arboriculturist should meet the site agent at a pre start meeting to ensure the correct erection of barriers and ground protection forming the construction exclusion zone (see Clause **9**).

3.2.3 The sequence of events outlined in **3.2.2** may not be necessary for all planning applications. For example, planning applications for a single conservatory may not require the level of detail that needs to accompany a planning application for the development of a site with one or more dwellings.

3.2.4 The success of the process outlined in **3.2.2** depends on the co-operation of all involved in the design and development team which should include an arboriculturist. In particular, it is essential for those involved in the development site works to appreciate the need for maintaining the construction exclusion zone. Any incursion into this area can quickly destroy all of the time, effort and expense which has gone into the retention of the trees.

3.2.5 Local authorities have an important role to play in encouraging and enforcing the processes outlined in **3.2.2**. The means for this are contained in existing regulations (see Annex A), which include provision for local authorities to enforce planning requirements. An arboriculturist appointed by the developer can help monitor site activity but enforcement is the responsibility of the local authority (e.g. active supervision of sites within their areas).

4 Surveys

4.1 Land survey

4.1.1 An accurately measured land survey (also known as a topographical survey) should be undertaken showing all relevant existing site features. Where trees are present, clearance of vegetation to facilitate the survey process should be undertaken only if strictly necessary and with care using hand held machinery. Mechanized flails may be used in more open areas, although bulldozing or soil stripping should be avoided.

4.1.2 This survey should be made available as scale drawings and in a commonly agreed digital format, if available, before any application for planning permission is submitted. Computer-based drawing software should be used where possible.

4.1.3 Prior to commencing the topographical survey, it may be appropriate to seek the advice of an arboriculturist to identify all trees that are relevant for inclusion in the survey. Alternatively, the topographical survey should include all trees present, and certainly all those over 75 mm stem diameter, measured at 1.5 m above adjacent (higher) ground level. Trees over this size growing on land adjacent to the site, which are at or within a distance equal to 12 times their stem diameter from the boundary (or 10 times their base diameter, in the case of multi-stemmed trees), or where their crowns overhang the site boundary, should also be included. For trees with more than one stem below 1.5 m above ground level, the stem diameter should be measured immediately above the root flare.

4.1.4 Other arboricultural or landscape features such as shrub masses or hedges should also be identified. The position of stumps should be included.

4.1.5 To summarize, the land survey should include:

a) the location of all trees, shrub masses, hedges etc., as identified in **4.1.3** and **4.1.4**;

b) other relevant features, such as streams, buildings and other structures, boundary features, trenching scars near to trees and services including drainage runs;

c) spot heights of ground level throughout the site, as a basis for avoiding changes in soil level around retained trees;

d) the approximate location of trees on land adjacent to the development site (see **4.1.3**), that might influence the site or might be important as part of the local landscape character.

4.2 Tree survey

4.2.1 A tree survey should be undertaken by an arboriculturist and should record information about the trees on a site independently of and prior to any specific design for development. [As a subsequent task, and with reference to a design or potential design, the results of the survey should be included in the preparation of a tree constraints plan (TCP), which should be used to assist with site layout design (see Clause **6**)].

NOTE For clearance of vegetation see **4.1.1**.

4.2.2 The tree survey should include all trees included in the land survey (see **4.1.3** and **4.1.4**), as well as any that may have been missed, and it should categorize trees or groups of trees, including woodlands (see **4.2.4**) for their quality and value within the existing context, in a transparent, understandable and systematic way. Where the arboriculturist deems it appropriate, the trees should be tagged with small metal or plastic tags, placed as high as is convenient on the stem of each tree.

4.2.3 Whilst master plan proposals for the development of the site might be available, the trees should be surveyed without taking these into consideration. All detailed design work on site layout should take into consideration the results of the tree survey (and the TCP) as this facilitates the logical sequence of events referred to in **3.2.2** and the flow diagram in Figure 1.

4.2.4 Trees forming groups and areas of woodland (including orchards, wood pasture and historic parkland) should be identified and considered as groups where the arboriculturist determines that this is appropriate, particularly if they contain a variety of species and age classes that could aid long-term management. It may be appropriate to assess the quality and value of such groups of trees as a whole, rather than as individuals. However, an assessment of individuals within any group should still be undertaken if they are open-grown or if there is a need to differentiate between them.

4.2.5 The quality and value of each tree or group of trees should be recorded by allocating it to one of the four categories listed in **4.3.1**. The categories should be differentiated on the tree survey plan by colour, or by suffixing the category adjacent to the tree identification number on the tree survey plan (see **4.2.6**).

NOTE Suggested colours are given in Table 1.

4.2.6 A schedule to the survey should list all the trees or groups of trees. The following information should be provided:

a) reference number (to be recorded on the tree survey plan);

b) species (common and scientific names, where possible);

c) height in metres;

d) stem diameter in millimetres at 1.5 m above adjacent ground level (on sloping ground to be taken on the upslope side of the tree base) or immediately above the root flare for multi-stemmed trees;

e) branch spread in metres taken at the four cardinal points to derive an accurate representation of the crown (to be recorded on the tree survey plan);

f) height in metres of crown clearance above adjacent ground level (to inform on ground clearance, crown stem ratio and shading);

g) age class (young, middle aged, mature, over-mature, veteran);

h) physiological condition (e.g. good, fair, poor, dead);

i) structural condition, e.g. collapsing, the presence of any decay and physical defect;

j) preliminary management recommendations, including further investigation of suspected defects that require more detailed assessment and potential for wildlife habitat;

k) estimated remaining contribution in years (e.g. less than 10, 10–20, 20–40, more than 40);

l) R or A to C category grading (see Table 1) to be recorded in plan on the tree survey plan.

NOTE 1 An example tree survey pro forma is given in Annex D (see also BS EN ISO 11091).

NOTE 2 It may be appropriate to assess and list the amenity value of trees as a separate consideration. Various methods have been proposed as aids to making this assessment (see Annex B for arboricultural organizations).

4.3 Tree categorization method

4.3.1 Trees should be categorized in accordance with the cascade chart in Table 1.

Table 1 — Cascade chart for tree quality assessment

TREES FOR REMOVAL				
Category and definition	**Criteria**			**Identification on plan**
Category R Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other R category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality NOTE Habitat reinstatement may be appropriate (e.g. R category tree used as a bat roost: installation of bat box in nearby tree).			DARK RED
TREES TO BE CONSIDERED FOR RETENTION				
Category and definition	**Criteria — Subcategories**			**Identification on plan**
	1 Mainly arboricultural values	**2 Mainly landscape values**	**3 Mainly cultural values, including conservation**	
Category A **Those of high quality and value:** in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested)	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups)	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN
Category B **Those of moderate quality and value:** those in such a condition as to make a significant contribution (a minimum of 20 years is suggested)	Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage)	Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality	Trees with clearly identifiable conservation or other cultural benefits	MID BLUE
Category C **Those of low quality and value:** currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150 mm	Trees not qualifying in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit	Trees with very limited conservation or other cultural benefits	GREY
	NOTE Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150 mm should be considered for relocation.			

4.3.2 The purpose of the tree categorization method, which should be applied by an arboriculturist, is to identify the quality and value of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained should development occur.

4.3.3 For a tree to qualify under any given category it should fall within the scope of that category's definition (R, A, B, C) and, for a tree in categories A–C, it should qualify under one or more of the three subcategories (1, 2, 3).

4.3.4 In the categories A, B, C, which together deal with trees that should be a material consideration in the development process, the subcategories are intended to reflect arboricultural, landscape and cultural values respectively. Category R trees are those which would be lost in the short term for reasons connected with their physiological or structural condition. For this reason, they should not be a consideration in the planning process (see note to **6.1**).

4.3.5 The tree survey schedule should list which subcategory applies. It is intended that each subcategory has equal weight such that, for example, an A1 tree has the same retention priority as an A2 tree. Some trees could qualify under two or even three criteria, e.g. A1 and 2 but would not accrue added value.

4.3.6 When determining the appropriate category for any given tree, group or woodland, the arboriculturist should start by determining whether the tree falls within the scope of the R category. Assuming that the tree can be retained, the arboriculturist should then proceed on the presumption that all trees are considered according to the criteria for inclusion in the high category. Trees that do not meet these strict criteria should then be considered in light of the criteria for inclusion in the moderate category. This cascade process should be repeated, as required, until the appropriate quality and value assessment is reached.

NOTE The term "group" is intended to identify trees that form cohesive arboricultural features either **aerodynamically** (e.g. trees that provide companion shelter), **visually** (e.g. avenues or screens) or **culturally** including for biodiversity (e.g. parkland or wood pasture), in respect to each of the three subcategories.

4.3.7 When assigning trees to any of the categories, the presence of any serious disease or tree-related hazards should be taken into account. If disease is fatal and/or irremediable or likely to require sanitation for the protection of other trees, the trees concerned may need to be categorized as R, even if they otherwise have considerable value. If mechanical defects present an unacceptable risk to people and property, the extent to which the defects are remediable, including the effect that this might have on the tree's remaining value, should indicate whether the tree should still be assigned to the category that it would otherwise merit.

NOTE If a layout design places category R trees in an inaccessible location such that concerns over public safety are reduced to an acceptable level, it may be preferable or possible to defer the recommendation to fell.

4.4 Additional considerations

4.4.1 During the course of a tree survey, it might be found that certain trees require immediate attention. For example, they might present an immediate and serious hazard to life or property, or they might be affected by a pest or pathogen which would cause widespread and serious damage unless eradicated. These issues should be brought to the attention of the appropriate party as soon as possible.

4.4.2 Particular care is needed when considering the quality and value category of young trees, especially where they occur as individual specimens. Where these are less than 150 mm stem diameter (at 1.5 m above adjacent ground level), it may be relatively straightforward to relocate them within the site (e.g. using a tree spade) or to replace them with similar replacement trees. Whilst the presence of young trees of good form and vitality is generally desirable (i.e. those trees which have the potential to develop into quality mature specimens), they should not be allowed to dominate site layout considerations. When evaluating the merits of retaining and/or relocating such trees, a comparison between the costs of the various options should be the main determining factor. However, they should be categorized as C grade trees.

NOTE It is sometimes possible to relocate mature trees. However, as this is a costly and complex operation with a variable chance of success, it is only a viable option in exceptional cases.

4.4.3 The tree survey may identify the presence of veteran trees on the site. Such trees should be considered carefully in relation to new development, as it is rarely acceptable to locate them within developed areas, rather than open space. The implications of their presence on the land use of the surrounding site should be assessed at the earliest possible stage of the planning process. Veteran trees should be assessed according to the recommendations in **4.3.1**. By this assessment, most genuine veteran trees are likely to be included in category A3.

4.5 Tree survey — post-planning

It is recognized that, on occasions, arboricultural advice is not sought until after a preliminary site layout has been prepared. Although this is not the ideal situation, timely and appropriate expert advice can still make a valuable contribution to the process of tree retention and protection. In cases where the arboriculturist is provided with a layout, the tree survey should be undertaken as described in **4.2** to provide advice on tree retention, protection, remedial or mitigation works and new landscape design. It is essential that the trees are assessed objectively and without reference to site layout proposals.

5 Tree constraints plan

5.1 General

The influence that trees on and adjacent to the site will have on the layout should be plotted on a plan called the tree constraints plan (TCP). This is a design tool which should show the below ground constraints, represented by the RPA, and the above ground constraints the trees pose by virtue of their size and position.

5.2 Root protection area (RPA)

5.2.1 In order to avoid damage to the roots or rooting environment of retained trees, the RPA should be plotted around each of the category A, B and C trees (see **4.3**). This is a minimum area in m^2 which should be left undisturbed around each retained tree.

5.2.2 The RPA should be calculated using Table 2 as an area equivalent to a circle with a radius 12 times the stem diameter for single stem trees and 10 times basal diameter for trees with more than one stem arising below 1.5 m above ground level.

Table 2 — Calculating the RPA

Number of stems	Calculation
Single stem tree	$\text{RPA}(m^2) = \left(\frac{\text{stem diameter (mm) @ 1.5 m} \times 12}{1\ 000}\right)^2 \times 3.142$
Tree with more than one stem arising below 1.5 m above ground level	$\text{RPA}(m^2) = \left(\frac{\text{Basal diameter (measured immediately above root flare (mm)} \times 10}{1\ 000}\right)^2 \times 3.142$
NOTE The 12× multiplier is based on NJUG 10 [9] and published work by Matheny and Clark [10].	

5.2.3 The calculated RPA should be capped to 707 m^2, e.g. which is equivalent to a circle with a radius of 15 m or a square with approximately 26 m sides.

5.2.4 The RPA, for each tree as determined in Table 2, should be plotted on the TCP taking full account of the following factors, as assessed by an arboriculturist, which may change its shape but not reduce its area whilst still providing adequate protection for the root system.

a) The likely tolerance of the tree to root disturbance or damage, based on factors such as species, age and condition and presence of other trees. (For individual open grown trees only, it may be acceptable to offset the distance by up to 20 % in one direction.) (See Note 1 of **11.3.5**.)

b) The morphology and disposition of the roots, when known to be influenced by past or existing site conditions (e.g. the presence of roads, structures and underground services).

c) The soil type and structure.

d) Topography and drainage.

e) Where any significant part of a tree's crown overhangs the provisional position of tree protection barriers, these parts may sustain damage during the construction period. In such cases, it may be necessary to increase the extent of tree protection barriers to contain and thereby protect the spread of the crown. Protection may also be achieved by access facilitation pruning (see **11.2.1**). The need for such measures, including the precise extent of pruning, should be assessed by an arboriculturist.

5.3 Above ground constraints

5.3.1 The current and ultimate height of category A, B and C trees should be annotated on the tree constraints plan (TCP) where this would cause unreasonable obstruction of sunlight or daylight to the development. In practice this could be represented by a segment with a radius from the centre of the stem equal to the height of the tree drawn from due North West to due East indicating the shadow pattern through the main part of the day.

NOTE 1 This varies between species and depends on foliage size and density (see BRE 350 [11]).

NOTE 2 The spatial relationship of the proposed development to the tree(s) affects the amount of sunlight received, the amount of sky visible from the development and the solar gain received by the development (see BRE 209 [12]).

NOTE 3 Proprietary software is available that can assist with calculation and plotting of tree shadow extent (see also BRE CP75/75 [13]).

5.3.2 The current and ultimate height and spread of a tree is also a constraint due to its size, dominance and movement in strong winds. For this reason, as well as in relation to shading, the existing spread of branches and the future branch growth should be taken into consideration as a constraint in the design phase.

6 Arboricultural implications assessment (AIA) and design issues

6.1 General

Whilst the tree constraints plan (TCP) should inform site layout design, it is recognized that the competing needs of development mean that trees are only one factor requiring consideration. Certain trees are of such importance and sensitivity as to prevent development occurring or to substantially modify its design and layout. However, care should be taken to avoid misplaced tree retention; attempts to retain too many or unsuitable trees on a site may result in excessive pressure on the trees during development work and subsequent demands for their removal. The end result may be fewer or less suitable trees than would be the case if arboricultural input, planning, selection, conservation and new planting is incorporated into the approved final design.

NOTE Trees are material considerations in the formal planning system, whether or not they are statutorily protected.

6.2 Tree constraints and design

6.2.1 Trees can impinge on many aspects of site development. Adequate consideration should be given to the requirements of trees by all members of the design team throughout the development process.

6.2.2 Even if there are no trees on the site, areas for future planting should be plotted on the tree constraints plan (TCP) and protected from damage, especially soil compaction due to construction activity, by the erection of barriers and/or ground protection (see **7.1**). Where such pre development protection is not implemented, prior remediation measures should be employed, such as soil ripping with a winged-tined plough or subsoil aeration.

6.2.3 During the design and planning stages the following factors should be taken into account.

a) The presence of tree preservation orders or conservation area protection.

b) The effect that development proposals may have on the amenity value of trees, both on and near the site.

c) The above and below ground constraints (see Clause **5** and **6.3.2**).

d) The construction of the proposed development (see **7.2**).

e) Whether the design and/or construction of the proposed development can be modified to accommodate retention of trees that would otherwise be at risk or lost. This includes appropriate tree surgery works that acceptably mitigate adverse effects caused by trees.

f) Infrastructure requirements, e.g. easements for underground or above ground services; highway safety and visibility splays; and other infrastructural provisions, such as substations, refuse stores, lighting, signage and CCTV requirements.

g) The end use of the space.

h) Whether tree loss resulting from the development proposals can be acceptably mitigated by new tree planting.

NOTE There is a need to avoid the cumulative damaging effects of incursions into the RPA, for example from excavation for services and the laying of permanent hard surfaces.

6.2.4 Particular care is needed regarding the retention of large old trees which become enclosed within the new development. Such trees may be less resilient and more likely to die or become potentially unsafe as a result of the pressures associated with development. Even if they survive in the short term, they may die before the new buildings are obsolete. Their subsequent removal can pose technical difficulties and be costly. Where the retention of large, mature or veteran trees is considered desirable, it may be most effective to conserve them by incorporating them into open spaces or large gardens, thereby allowing adequate space for their long term physical protection and maintenance.

6.3 Proximity of trees to structures

6.3.1 A realistic assessment of the probable impact of any proposed development on the trees and vice versa should take into account the characteristics and condition of the trees, with due allowance and space for their future growth and maintenance requirements.

6.3.2 The relationship of windows to trees which may obstruct light, should be taken into account. Excessive shading by trees should be avoided, particularly to rooms requiring light. This will vary with orientation and aspect of the building, proximity to the tree and the type of tree as foliage size and density varies with species (see also BRE Guides in the Bibliography).

6.3.3 Damage can occur to trees and structures by the continuous whipping of branches. Branch ends may have to be cut back repeatedly, possibly spoiling the shape of the tree. Trees should not be retained on the basis that their ultimate branch spread can be significantly controlled by periodic pruning, unless this is a desired management outcome (e.g. pollarded trees).

6.3.4 Large trees can cause apprehension to occupiers of nearby buildings especially during windy conditions.

6.3.5 Leaves of some species may cause problems, particularly in the autumn, by blocking gullies and gutters. Fruit can cause slippery patches and accumulation of honeydew may be damaging to surfaces and vehicles.

7 Arboricultural method statements (AMS) and the tree protection plan (TPP)

7.1 Once the layout proposals have been finalized a TPP should be prepared containing the following information:

a) trees selected for retention, clearly identified (e.g. by number) and marked on a plan with a continuous outline;

b) trees to be removed, also clearly identified (e.g. by number) and marked on a plan with a dashed outline;

c) the precise location for erection of protective barriers and any other relevant physical protection measures including ground protection (see Clause **5** and Clause **9**), to protect the RPA and marked as a construction exclusion zone on the plan (see **7.2**).

NOTE 1 While the root protection area may be plotted as a circle on the constraints plan, the position of the barrier and any ground protection should be shown on subsequent plans as a polygon representing the actual position of the protection. It is helpful during setting out, and for the purposes of enforcement if the plan is annotated with the dimensions of the exclusion zones.

d) design details of the proposed physical means of protection, indicated through drawings and/or descriptive text, including any development facilitation pruning;

e) areas of structural landscaping to be protected from construction operations to prevent the soil structure being damaged (see **6.2.2**).

f) all the details in a)–e) above should be incorporated into subsequent drawings and method statements used for design purposes or issued for use on site, to ensure that all interested parties are fully aware of the areas in which access and works may and may not take place.

NOTE 2 Attention is drawn to the CDM Regulations [7].

7.2 In order to avoid disturbance to the physical protection forming the construction exclusion zone once it is installed, it is essential to consider, make allowance for and plan all construction operations which will be undertaken in the vicinity of trees, in particular:

a) site construction access;

b) the intensity and nature of the construction activity;

c) contractors' car parking;

d) phasing of construction works;

e) the space needed for all foundation excavations and construction works;

f) the availability of special construction techniques (see Clause **11**);

g) the location and space needed for all service runs including foul and surface water drains, land drains, soakaways, gas, oil, water, electricity, telephone, television or other communication cables;

h) all changes in ground level, including the location of retaining walls, steps and making adequate allowance for foundations of such walls and backfillings;

i) space for cranes, plant, scaffolding and access during works;

j) space for site huts, temporary latrines (including their drainage) and other temporary structures;

k) the type and extent of landscape works which will be needed within the protected areas, and the effects these will have on the root system (for guidance see **11.9** for hard landscape and Clause **12** for soft landscape);

l) space for storing (whether temporary or long-term) materials, spoil and fuel and the mixing of cement and concrete.

m) the effects of slope on the movement of potentially harmful liquid spillages towards or into protected areas (see **9.4.2**).

8 Pre development tree work

8.1 General

Once a final layout for the development area has been approved, an arboriculturist should review the relationship of the development to the trees and prepare a schedule of tree works listing all the trees that require work by number, accompanied by a plan showing where each tree is located. The schedule should include all the trees to be removed to clear the main development area and those remaining that require remedial works. Remedial tree works should be based on what is required to establish acceptable levels of risk and management in the context of the proposed land use. The schedule of works should be accompanied by a detailed specification describing each work operation (see BS 3998).

NOTE Tree work is a specialist task that requires competent operatives, adequately insured. Guidance on the selection of an appropriate contractor can be obtained from the Arboricultural Association, which has a Directory of Approved Contractors (see Annex B for contact details).

8.2 Working within the RPA

8.2.1 Care should be taken to ensure during tree removal or remedial work that damage to the retained trees and/or disturbance to the RPA is avoided. Appropriate precautions should include dismantling techniques to reduce the risk of accidental damage and ground protection where excessive pedestrian movements or use of plant and machinery may lead to compaction.

8.2.2 Debris from tree work might be removed from site, chipped and left on site, or left on site in an unprocessed form as habitat depending on the site circumstances. Debris should not be burnt where it could damage the crowns of retained trees. Stumps within RPAs should not be dug or pulled out but should be ground out, if removal is required, to avoid adverse impact on retained trees. Consideration should be given to leaving standing stumps and debris as habitat for wildlife if the circumstances allow (see BS 3998[1)]).

9 The construction exclusion zone: barriers and ground protection

9.1 General

9.1.1 All trees which are being retained on site should be protected by barriers and or ground protection, as recommended in Clause **7**. Vertical barriers should be erected and ground protection installed before any materials or machinery are brought onto the site and before any demolition, development or stripping of soil commences. Areas of new or retained structure planting should be similarly protected, based on the extent of the soft landscaping as shown on the approved drawings. Once erected, barriers and ground protection should be regarded as sacrosanct, and should not be removed or altered without prior recommendation by an arboriculturist and approval of the local planning authority.

9.1.2 In the case of particularly vunerable trees or trees sited close to the construction access, the owner or developer should make arrangements for an arboriculturist to supervise necessary works and the erection of protection before the handover of land to the contractor.

9.1.3 Pre development tree work may be undertaken before the installation of tree protection, where required, with the agreement of the local planning authority (see Clause **8**).

9.2 Barriers

9.2.1 Barriers should be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained tree(s). On all sites, special attention should be paid to ensuring that barriers remain rigid and complete.

9.2.2 In most cases, barriers should consist of a scaffold framework in accordance with Figure 2 comprising a vertical and horizontal framework, well braced to resist impacts, with vertical tubes spaced at a maximum interval of 3 m. Onto this, weldmesh panels should be securely fixed with wire or scaffold clamps. Weldmesh panels on rubber or concrete feet are not resistant to impact and should not be used.

NOTE The above is preferred because it is readily available, resistant to impact, can be re-used and enables inspection of the protected area.

9.2.3 It may be appropriate on some sites to use temporary site office buildings as components of the tree protection barriers.

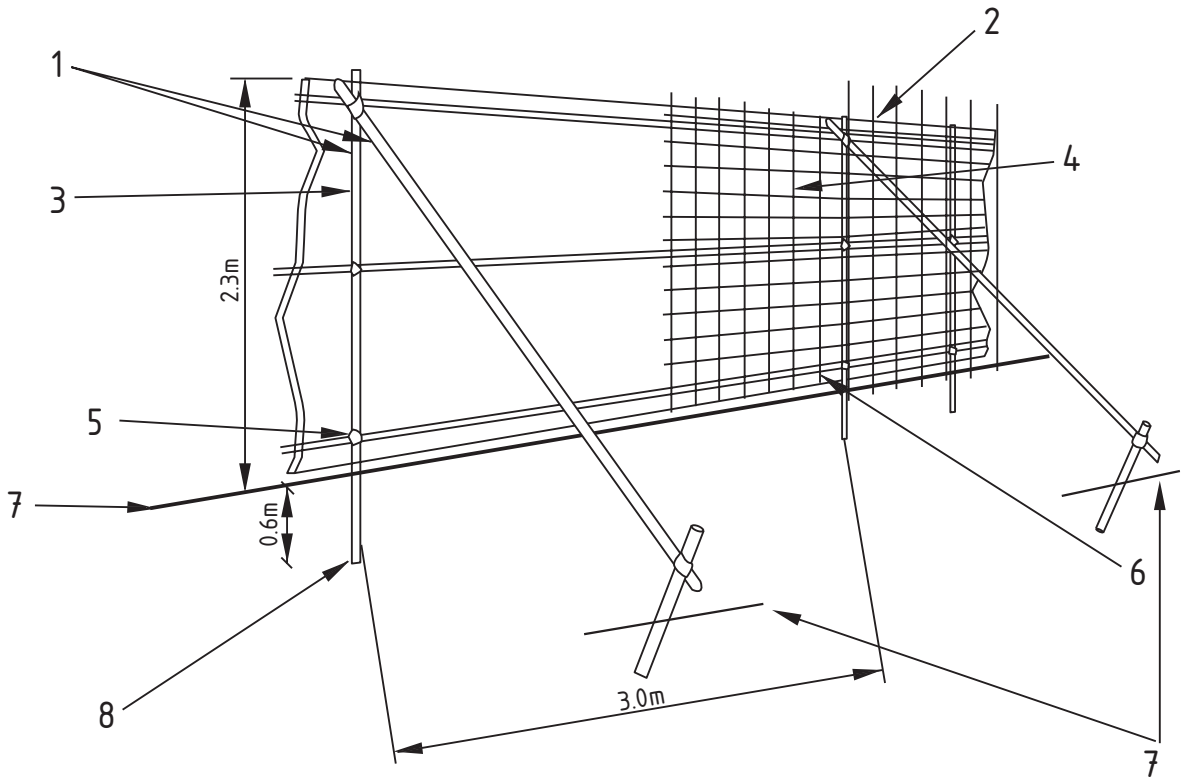
[1)] Revision in preparation.

9.3 Ground protection

9.3.1 Where it has been agreed during the design stage, and shown on the tree protection plan, that vehicular or pedestrian access for the construction operation may take place within the root protection area (RPA), the possible effects of construction activity should be addressed by a combination of barriers and ground protection. The position of the barrier may be shown within the RPA at the edge of the agreed working zone but the soil structure beyond the barrier to the edge of the RPA should be protected with ground protection.

9.3.2 For pedestrian movements within the RPA the installation of ground protection in the form of a single thickness of scaffold boards on top of a compressible layer laid onto a geotextile, or supported by scaffold, may be acceptable (see Figure 3).

9.3.3 For wheeled or tracked construction traffic movements within the RPA the ground protection should be designed by an engineer to accommodate the likely loading and may involve the use of proprietary systems or reinforced concrete slabs (see **11.8** and **11.9**).



1 Standard scaffold poles
2 Uprights to be driven into the ground
3 Panels secured to uprights with wire ties and where necessary standard scaffold clamps
4 Weldmesh wired to the uprights and horizontals
5 Standard clamps
6 Wire twisted and secured on inside face of fencing to avoid easy dismantling
7 Ground level
8 Approx. 0.6 m driven into the ground

Figure 2 — Protective barrier

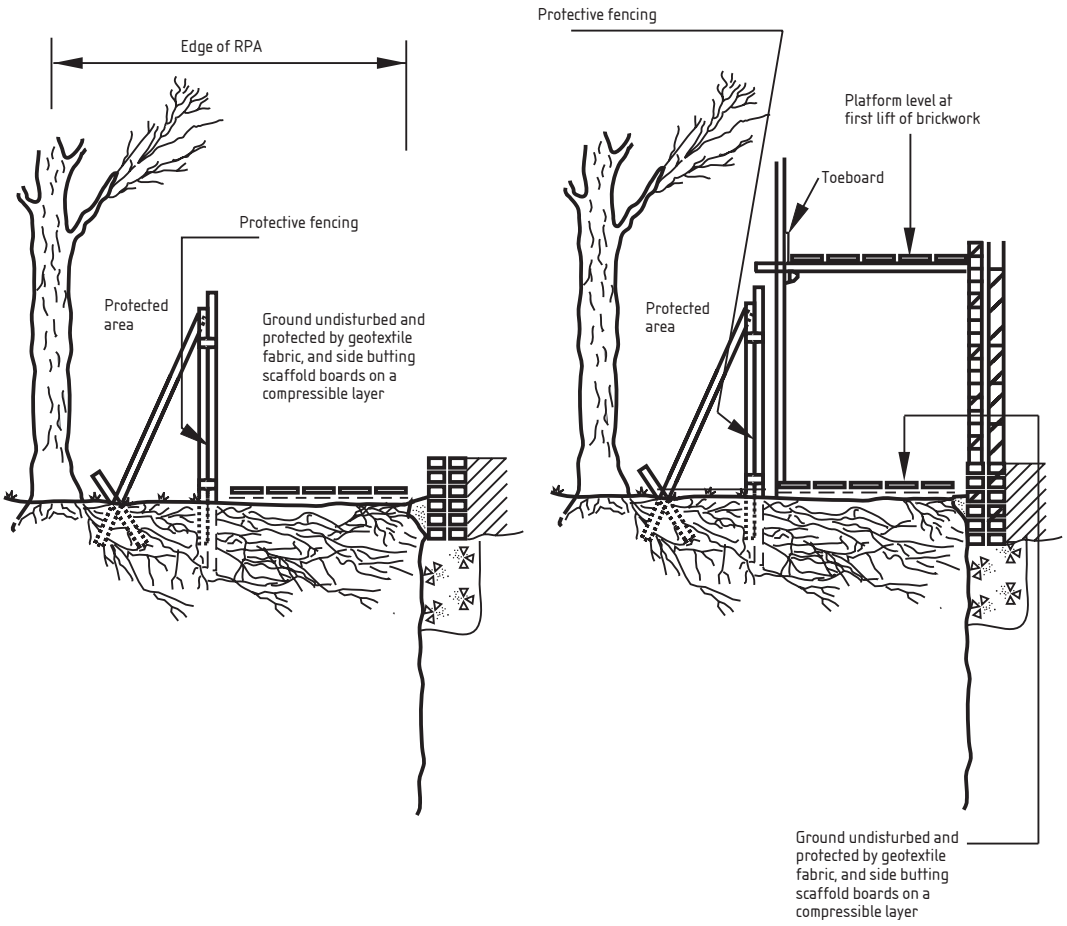


Figure 3 — Scaffolding within the RPA

9.4 Additional precautions outside the exclusion zone

9.4.1 Once the exclusion zone has been protected by barriers and/or ground protection, construction work can commence. All weather notices should be erected on the barrier with words such as:

"Construction exclusion zone — Keep out".

9.4.2 In addition the following should be addressed or avoided.

a) Care should be taken when planning site operations to ensure that wide or tall loads, or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Such contact can result in serious damage to them and might make their safe retention impossible. Consequently, any transit or traverse of plant in close proximity to trees should be conducted under the supervision of a banksman to ensure that adequate clearance from trees is maintained at all times. In some circumstances it may be impossible to maintain adequate clearance thus necessitating access facilitation pruning (see **11.2.1**).

b) Material which will contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings, should not be discharged within 10 m of the tree stem.

c) Fires should not be lit in a position where their flames can extend to within 5 m of foliage, branches of trunk. This will depend on the size of the fire and the wind direction.

d) Notice boards, telephone cables or other services should not be attached to any part of the tree.

9.4.3 It is essential that allowance should be made for the slope of the ground so that damaging materials such as concrete washings, mortar or diesel oil cannot run towards trees.

10 Avoiding damage to structures by trees

10.1 General

10.1.1 Buildings should be constructed to allow for future growth of planted or self-sown trees.

10.1.2 In some situations, trees and vegetation can adversely affect structures either by direct action (see **10.2**), or by indirect action (see **10.3**) causing shrinkage or swelling of a clay subsoil.

10.1.3 Even if no trees exist at the time of construction, they may be planted in the future or self-seeded. Consideration should be given to this possibility by having foundations in accordance with Table 3 which will allow for reasonable future vegetation, or to an engineered design (see NHBC Standards, Chapter 4.2 [14]).

10.2 Direct damage by trees to structures

10.2.1 Trees can cause direct damage to structures by:

a) the disruption of underground services and pipelines;

b) displacement, lifting or distorting;

c) the impact of branches with the superstructure;

d) structural failure of the tree.

The potential for direct damage should be taken into consideration throughout the design and construction process.

10.2.2 The growth of the base of the stem or of roots near the surface exerts relatively small forces. Whilst paving slabs or low boundary walls can be lifted or pushed aside easily, heavier or stronger structures are more likely to withstand these forces without damage, as the root distorts around the obstruction before damage occurs. The greatest risk of direct damage occurs close to the tree from the incremental growth of the main stem and secondary thickening of the roots, and diminishes rapidly with distance.

10.2.3 New tree planting should be kept at distances from structures of at least those in Table 3.

10.2.4 In the case of established trees where construction work is to take place near to the main stem and roots, the following precautions should be taken to allow for future tree growth in order to protect the structure:

a) foundations should be reinforced to resist lateral thrust; or

b) walls or structural slabs should bridge over roots allowing sufficient clearance for secondary thickening or be designed to distort without cracking; or

c) pavings and other surfaces should be laid on a flexible base to allow movement and to facilitate relaying if distortion becomes excessive.

10.2.5 Water leaking from damaged drains, sewers or water mains encourages localized root growth. Roots are then likely to enter a drain or sewer through the defect and proliferate, causing blockage and an enlarging of the initial defect. Provided they are further from trees than distances stipulated in Table 3, intact drains are not likely to suffer direct damage and will not attract roots. Damage to drains and sewers can be avoided by the following:

a) re-routeing services to conform to Table 3;

b) ensuring watertight joints;

c) in clay soils, use of flexible materials and/or joints to accommodate movement;

d) not using perforated land drains near trees.

10.2.6 Allowance should be made for the swaying of stem and branches during storm conditions. Branches which are liable to strike the structure should be pruned back to a suitable branching point (see BS 3998). Trees in a condition that renders them liable to collapse should not be retained near structures (see category R in Table 1).

Table 3 — Minimum distance (m) between young trees or new planting and structure to avoid direct damage to a structure from future tree growth

Type of structure	Diameter of stem at 1.5 m above ground level at maturity		
	<30 cm	(30–60) cm	>60 cm
Buildings and heavily loaded structures	—	0.5	1.2
Lightly loaded structures such as garages, porches etc.	—	0.7	1.5
Drains and underground services			
<1 m deep	0.5	1.5	3.0
>1 m deep	—	1.0	2.0
Masonry boundary walls[a]	—	0.5	1.0
	—	(1.0)	(2.0)
In situ concrete paths and drives[a]	—	0.5	1.5
	(0.5)	(1.0)	(2.5)
Paths and drives with flexible surfaces or paving slabs[a]	—	0.5	1.0
	(0.7)	(1.5)	(3.0)

[a] These distances assume that some movement and minor damage might occur. Guidance on distances which will generally avoid all damage is given in brackets.

10.3 Indirect damage by trees to structures

For guidance on avoiding indirect damage by trees to structures see NHBC Chapter 4.2 [14].

11 Demolition and construction in proximity to existing trees

11.1 General

11.1.1 Whilst the most reliable way to ensure tree retention is to preserve the RPA completely undisturbed, it may be necessary to undertake demolition operations and/or to incorporate hard surfaces and other construction within it. The ability of the tree(s) to tolerate some disturbance depends on individual circumstances including prevailing site conditions. Accordingly the advice of an arboriculturist should be sought for any operations within the root protection area. It should be noted that, in general, the older the tree, the less successfully it will adapt to new conditions. For this reason, the details of designs incorporating such trees should be considered with particular care (see also **6.2.3**).

11.1.2 Where it is intended to undertake demolition or construction operations within the root protection area, precautions should be taken to maintain the condition and health of the root system (see Annex C) and in particular to:

a) prevent physical damage to the roots during demolition or construction (such as by soil compaction or severing);

b) make provision for water and oxygen to reach the roots;

c) allow for the future growth of the root system;

d) preserve the soil structure at a suitable bulk density for root growth and function (in particular for soils of a high fines content).

11.1.3 Throughout the process of demolition or construction, including piling (see **11.6.3**), the soil structure within the root protection area should be protected. The methods of protecting trees from damage during all phases of demolition and construction work should conform to Clause **7** and Clause **9**.

11.2 Requirements for tree protection during demolition

11.2.1 Where demolition is proposed on a site where trees are to be retained, access facilitation pruning (see also Clause **8**) should be undertaken to prevent injurious contact between demolition plant and the tree(s). Any such pruning should be undertaken in accordance with a specification prepared by an arboriculturist.

11.2.2 Demolition of structures (including underground structures) within what would otherwise be a RPA should proceed according to the principles outlined in Clause **9**. Barriers should be erected and fit for purpose ground protection installed to the edge of the existing structure.

11.2.3 All plant and vehicles engaged in demolition works should either operate outside the RPA, or should run on a temporary surface designed to protect the underlying soil structure. Where such ground protection is required, it should be installed prior to commencement of operations (see **9.3**).

11.2.4 Where trees stand adjacent to structures scheduled for demolition, it may be necessary to undertake demolition inwards within the footprint of the existing building (often referred to as "top down, pull back"). Where levels of dust build-up on trees are likely, it may be necessary to seek the advice of an arboriculturist on remedial measures, e.g. hose down the tree(s) immediately following any significant accumulation of dust.

11.2.5 Where an existing hard surface is scheduled for removal, care should be taken not to disturb tree roots that may be present beneath it. Hand held tools or appropriate machinery should be used (under arboricultural supervision) to remove the existing surface. Tree roots exposed by such operations should be treated in accordance with details in **11.3**.

11.2.6 The advice of an arboriculturist should be sought where underground structures present within the RPA are/will become redundant. In general it is preferable to seal these off as this avoids the need for significant excavation.

11.3 Principles for avoiding tree root damage during construction

11.3.1 Prior to the installation of a new ground surface, existing ground cover vegetation (e.g. grass sward) should be killed using an appropriate herbicide (see *Pesticides Handbook* [15]). Herbicides that can leach through the soil, e.g. products containing sodium chlorate, should not be used. Specialist advice should be sought in order to determine the most suitable herbicide treatment.

11.3.2 The soil surface should not be skimmed to establish new paving or other surfaces at the former ground level. Loose organic matter and/or turf should be removed carefully using hand tools. The new surface should then be established above the former ground level, using a granular fill, where required.

11.3.3 If ground levels are to be raised within the RPA this should be achieved by use of a granular material which does not inhibit vertical gaseous diffusion. Examples of suitable granular materials include, no-fines gravel, washed aggregate, or cobbles. Depending on the California Bearing Ratio (CBR) of the soil, it may be necessary to install a load suspension layer such as a cellular confinement system.

11.3.4 In concentration carbon dioxide is detrimental to tree root function. Because this gas principally diffuses vertically through the soil, new impermeable surfacing within the RPA should be restricted to a maximum width of 3 m and situated tangentially to one side of a tree only, or confined to an area no greater than 20 % of the root protection area, whichever is the smaller.

11.3.5 Any excavations which have to be undertaken within the root protection area should be carried out carefully by hand, avoiding damage to the protective bark covering larger roots. Roots, whilst exposed, should be wrapped in dry, clean hessian sacking to prevent desiccation and to protect from rapid temperature changes. Roots smaller than 25 mm diameter may be pruned back, preferably to a side branch, using a proprietary cutting tool such as bypass secateurs or handsaws. Roots larger than 25 mm should only be severed following consultation with an arboriculturist, as they may be essential to the tree's health and stability. Prior to backfilling, any hessian wrapping should be removed and retained roots should be surrounded with sharp sand (builders' sand should not be used because of its high salt content which is toxic to tree roots), or other loose granular fill, before soil or other material is replaced. This material should be free of contaminants and other foreign objects potentially injurious to tree roots.

NOTE 1 The use of a trenching saw reduces the risk of longitudinal root shattering which can often occur where backactors are used to excavate trenches near to trees.

NOTE 2 Due to the demands that hand excavation places on a development project and its limitations with regards to health and safety considerations, it may be preferable to employ no-dig techniques.

11.4 Provision for water and oxygen

11.4.1 It is essential to maintain adequate supplies of water and oxygen for trees through the soil. Porosity is important particularly where the new hard surface covers an area of previously unmade ground, under which tree roots may have developed preferentially. New impermeable surfacing should not cover more than 20 % of the root protection area.

11.4.2 No-fines granular materials should be used wherever fill or a sub-base is required to help to ensure adequate gaseous diffusion. Due to the need to avoid excavation, and thereby root severance, within the RPA such sub-bases should be formed using a cellular confinement system such as a load suspension layer laid at ground level.

11.4.3 Excess water in the root protection area should be avoided, particularly on clay soils where waterlogging can occur. In these cases, the hard surface should slope away from the tree to avoid ponding. Provided surface water is not liable to be contaminated by salt or toxic run-off from oil or petrol, a permeable surface should be employed. If contamination is likely to be a problem, an impermeable surface may be used to prevent entry of toxic material (however see **11.4.1**).

11.4.4 If excess water is likely to be a problem, consideration should be given to the provision of suitable land drainage. Such drains should not be located within root protection areas.

11.5 Allowance for future growth

11.5.1 Future growth can lift paths or distort light structures such as walls (see also **10.2** and Table 3). Where such structures, including surfaces, are unavoidable near to trees, design and construction specification should take account of future growth.

11.5.2 If it is necessary to build a wall or similar structure over a root greater than 50 mm diameter, provision should be made for future diameter growth by surrounding the root with uncompacted sharp sand, void-formers, or other flexible fill materials, and by laying an adequately reinforced lintel or raft over the surface.

11.6 Foundations within the RPA

11.6.1 The insertion of structures within root protection areas may be justified if this allows the retention of a good quality tree (category A or B, see Table 1). However, it is essential that careful consideration is given to foundation design (see **11.6.2**). In such cases, the use of traditional strip footings, in particular those constructed tangentially across the root zone, can result in severe damage to tree roots and should be avoided.

11.6.2 Root damage can be minimized by using a combination of the following:

— piles or radial strip footings both of which should be located to avoid major tree roots;

— beams, slabs, suspended floors, where all should be laid at or above ground level, and cantilevered as necessary to avoid tree roots.

In order to arrive at a suitable solution, site specific and specialist advice regarding foundation design should be sought from an arboriculturist and an engineer.

11.6.3 Where piling is to be installed near to trees, the smallest practical pile diameter should be used as this reduces the possibility of striking major tree roots, and reduces the size of the rig required to sink the piles. The latter is particularly important where piling within the branch spread is proposed, as mini-rigs reduce the need for access facilitation pruning. Sheathed piles protect the soil and adjacent roots from the potential toxic effects of concrete.

11.7 Underground and above ground services

11.7.1 Trenching for the installation of underground services severs any roots present and may change the local soil hydrology in a way that adversely affects the health of the tree. For this reason particular care should be taken in the routeing and methods of installation of all underground services. Wherever possible, they should be kept together and trenchless techniques used. At all times where services are to pass within the RPA, detailed plans showing the proposed routeing should be drawn up in conjunction with an arboriculturist. Such plans should also show the levels and access space needed for installing the services and be accompanied by arboricultural method statements (AMS).

11.7.2 As an alternative to trenchless techniques, a possible solution is to hand excavate a narrow trench passing directly towards a tree along a radius to not closer than 1 m from the trunk, tunnel straight beneath the tree, preferably not less than 750 mm deep, and exit on the opposite side along another radius (see Figure 4). Provided the trench is kept as narrow as possible, the amount of root severance will be minimal, and will be far less than if a trench passes close beside the tree. It may be necessary to make provision to facilitate future servicing and repair without further damage to the tree roots.

11.7.3 Consideration should be given to the routeing of above ground services in order to avoid the need for detrimental and repetitive pruning. In this regard the current and future crown size of the tree should be assessed. Tree branches can be pruned back with care (see BS 3998) to provide space.

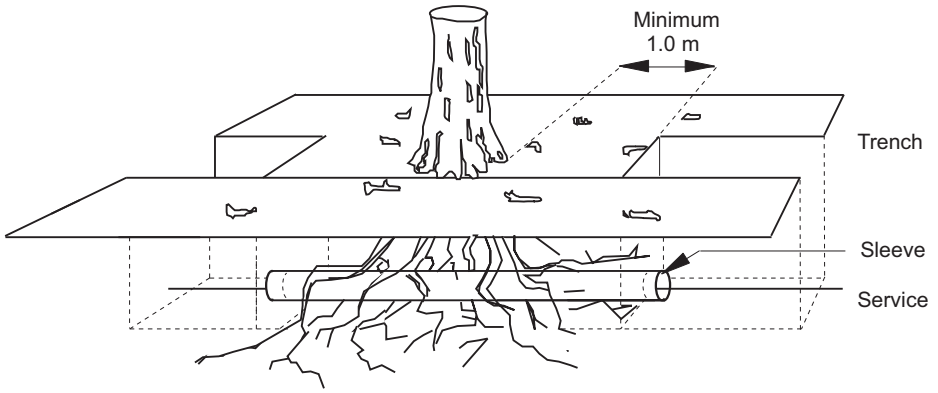


Figure 4 — Trenching along radii to minimize damage

11.8 Low-invasive vehicular access in proximity to trees

11.8.1 Where the construction of hard surface access cannot be avoided within the root protection area, a no-dig design should be used to avoid root loss due to excavation. In addition the structure of the hard surface should be designed to avoid localized compaction, by evenly distributing the carried weight over the track width and wheelbase of any vehicles that will use the access. Such designs might include the use of a three dimensional cellular confinement system as an integral component of the sub-base, to act as a load suspension layer. Driveways and roadways constructed according to this principle can be designed to be suitable for most types of traffic. Where this type of access is proposed, site-specific and specialist advice should be sought from an engineer and an aboriculturist in order to ensure that it is fit for purpose.

NOTE The use of two dimensional load suspension systems is not recommended.

11.8.2 Where the new access would cover in excess of 20 % of the RPA or be wider than 3 m within it, it should be constructed so as to allow moisture infiltration and gaseous diffusion.

NOTE It is an engineering requirement that roads constructed to a standard suitable for adoption by a local authority are waterproof. For this reason, such roads are impermeable and should, therefore, not exceed the 20 %/3 m limit of RPA coverage referred to above.

11.9 Types of hard surface and their suitability in proximity to trees

11.9.1 *General*

If a hard surface is proposed above the granular material, a permeable and gas-porous finished surface (wearing course) should be installed.

In some situations, consideration should be given to constructing the final surface prior to the main building works, so as to provide protection for the roots at subsequent stages. However, it may be desirable to protect the final surface from damage with a temporary covering.

11.9.2 *Washed gravel*

Washed gravel retains its porosity unless excessively consolidated, and is particularly useful where changes of level occur or an irregular shape is needed around the stem of a tree. Gravel is easily renewed or topped up. Although weeds may become established, they can be controlled by chemical or mechanical means. However, gravel is rarely suitable for use where there is vehicle or pedestrian traffic for example, in residential areas. Materials with a high fines content, such as binding gravels or hoggin, should not be used due to their almost impermeable texture when consolidated.

11.9.3 *Paving slabs and block pavers*

Paving slabs and block pavers are available with built in infiltration spaces between the slabs or blocks. These are ideal, though they should be laid dry-jointed on a sharp sand foundation to allow air and moisture to penetrate to the rooting area.

11.9.4 *In situ concrete*

As in situ concrete forms an impermeable surface, falls and openings should be provided for water and air to enter the soil. This can be achieved by forming 50 mm diameter holes in the construction of a slab at regular spacings of 300–600 mm (as determined by an engineer) and back-filling the resulting holes with no-fines gravel or aggregate. A high standard of materials and workmanship is needed if frost damage and excessive wear are to be avoided.

11.9.5 *Bitumen paving*

Bitumen paving can consist of porous or impermeable material. As the interstices in unsealed tar paving will eventually become blocked by silt, all such paving should be laid following the same principles as those for impermeable surfaces. Its use within the RPA should, therefore, be restricted to the parameters set out in **11.3.4**.

11.10 Edge supports

The excavation needed for the placement of kerbs, edgings and their associated foundations and haunchings can damage tree roots. Within the RPA, this should be avoided either by the use of alternative methods of edge support or by not using supports at all.

For example, where kerbing is required for light structures, such as footpaths, peg and board edging may be acceptable. For more substantial structures, such as estate roads, railway sleepers may be acceptable, retained in place with track pins or road pins. In some situations, for example where the roadway needs to traverse a lateral slope, gabions could be used to provide a kerbing solution (in this example, the gabions are installed on the down-hill side of the road). Gabions can be inter-linked, or pinned in place. Where it is necessary to pin kerbing in place, the pins should, where practical, be located clear of any major tree roots visible on the surface.

12 Soft surfaces around trees

12.1 General considerations

Soft surface finishes, including turf, mulch and cultivated beds, are preferred around trees as there is less likelihood of damage to trees by construction and there is provision for adequate penetration of water and air into the soil.

12.2 Prevention of damage

Tractor mounted rotavation or other heavy mechanical cultivation should not occur within the RPA. Any cultivation should be undertaken carefully by hand or pedestrian controlled light machinery, to minimize damage to the tree, particularly the roots. Changes of ground level within the root protection area of established trees should be avoided. Advice on the implications of proposed level changes and appropriate mitigation measures should be obtained from an arboriculturist.

12.3 Avoidance and remediation of compaction

In order to avoid compaction, there should be no vehicle or plant access within the root protection area. Where compaction has occurred, advice should be sought from an arboriculturist on de-compaction measures, such as forking, spiking, subsoil replacement by hand-dug radial trenching or subsoil aeration using compressed air injection equipment.

12.4 Herbicides

Herbicides for use in the vicinity of existing trees should be appropriate for the type of vegetation to be killed. Special care should be taken to avoid any damaging effects upon existing plants and trees to be retained, species to be introduced and existing sensitive habitats, particularly those associated with aquatic or drainage features.

NOTE When selecting and applying herbicides, attention is drawn to Health and Safety regulations on their use [16].

12.5 Planting and ground cover

Where grass is used as a ground cover, an area with a minimum radius of 500 mm from the base of trees should be left clear of turf or seed and mulched using an appropriate material (see **12.6**). This reduces competition for water and nutrients for young and newly planted trees. For all trees, a grass-clear area reduces the risk of mechanical damage to bark caused during routine maintenance by mowing or strimming machinery. Where possible, trees should be set within or surrounded by shrub planting and an appropriate mulch. This deters access and associated soil compaction, requires less frequent maintenance than grass and enables water penetration and gas diffusion through an open soil structure.

12.6 Use of mulch

12.6.1 Open soil and shrub planting areas around trees should be mulched to inhibit weed growth, reduce groundwater evaporation, resist compaction, enable gaseous exchange and water penetration to roots, and reduce maintenance requirements. The mulch material should be weed-free, non-matting, easy to apply, containable within the area of application and readily available. Fine particle organic mulch forms a more complete soil cover than a coarse, loose material. Coarse mulch material should be applied to a greater depth to achieve the desired benefits.

12.6.2 Appropriate materials for mulches include inorganic granular materials, such as gravels, stone chips and pea shingle, or organic granular materials, such as shredded bark, bark chips, hard hulls and husks or well-composted green waste to conform to PAS 100. Care should be taken to ensure that the latter material does not form an impermeable mat nor inhibit gaseous exchange to the bark of the tree or soil. Organic mulches should, therefore, not be spread up to the stem. Appropriate depth of mulch should be between 50 mm and 100 mm depending on the material and the design context. The area around the tree should be well-watered prior to the application of mulching material.

12.6.3 The use of peat should be avoided for reasons of sustainability. Non-composted organic materials such as grass cuttings, leaves, straw, sawdust or wood chips should not be used as these extract nitrogen from the soil as they decompose and may promote weed or harmful forms of fungal growth. Black plastic matting should not be used around trees as it inhibits water penetration and gaseous exchange, although permeable geotextile mats can be beneficial in controlling weeds around new plantings. Calcareous rock chippings (i.e. limestones) should not be used as these may raise the pH of soils to the detriment of most tree species.

13 Design considerations for new planting

13.1 General

13.1.1 The purpose of proposed new planting should be understood from the start of the design process so that appropriate choices of structure, location and species can be made. Advice on detailed design should be sought from a landscape architect or other competent person experienced in landscape design.

13.1.2 Trees may perform a variety of roles, both aesthetic and functional:

— shelter planting to benefit buildings, people, crops or stock;
— screen planting to hide the unsightly or create privacy;
— planting to define or divide spaces, or to define or direct routes or views;
— specimens or groups can be used for architectural effect to complement buildings;
— for their inherent aesthetic qualities;
— providing character or sense of place;
— softer, natural elements to counter the artificial lines of the built environment;
— for their contribution to nature conservation, biodiversity and biomass;
— reducing air pollution;
— providing shade; and
— controlling erosion.

13.1.3 All new tree planting proposals should take into consideration the future use, layout and design of a development site, constraints of soil and climate, the local landscape character and the contextual surroundings. As trees generally form the dominant elements of the long-term landscape structure of a site, careful consideration should be given to their ultimate height and spread, form, habit and colour, density of foliage and maintenance implications.

13.2 Planting adjacent to buildings

13.2.1 On all soils, it is inadvisable to plant trees at distances closer to a structure than those shown in Table 3 unless special precautions have been taken. Paths, patios and driveways, where they are not constructed to appropriate standards (see **10.3** and [14]) can be vulnerable to damage by trees with surface rooting characteristics. In addition, on shrinkable soils account should be taken of the foundation construction of existing and proposed nearby structures; planting should not compromise the structural performance of the foundation.

13.2.2 The effect of shade created by new trees and the likely extent and density of the tree crown when fully grown should be taken into consideration before new planting adjacent to buildings. Careful design and species selection should allow residents to enjoy reasonable light and the trees to develop into mature specimens. Special care should be exercised when considering planting large and/or fast growing evergreen trees as screens or hedging as these can be particularly oppressive, obstructing light all year round and requiring frequent maintenance to restrict their growth.

NOTE For information on planting adjacent to boundaries see Annex A and [6], [12] and [13].

13.3 Planting adjacent to roads

Roadside trees can make a significant contribution to the character of new developments. Their siting and species selection should be carefully co-ordinated at an early stage with other highway design considerations and, in the case of adopted roads, with the agreement of the relevant highway authority. Sight line requirements, lighting schemes, CCTV, underground and overhead service routes and avoidance of physical obstruction or damage should all be taken into account with due consideration for future growth and periodic maintenance requirements.

13.4 Planting in the vicinity of services

Trees should not be planted where they might obstruct overhead power lines or cables. In new developments, underground services should be ducted or otherwise protected at the time of construction to enable trees to be planted nearby without conflict (see utilities guidance documents [17]). Root barriers should be constructed, where considered necessary, under expert advice to reduce the risk of tree root intrusion into service runs.

14 Ground works and preparation for new planting

NOTE BS 4428 contains recommendations and guidance on general landscape operations with sections on preliminary investigations, drainage, grading and cultivation, tree planting, and woodland planting.

14.1 Drainage

New development may have an effect on the existing drainage pattern and ground water levels of a site, due to increased areas of hard surface and consequential drainage requirements. Existing trees may suffer due to an alteration in the supply of groundwater, whilst younger specimens and new plantings may be more likely to adapt to the changed conditions. Expert advice on both drainage and trees should be taken where ground water conditions are liable to such change.

14.2 Soil conditions

Before any of the landscape operations listed in BS 4428 are undertaken and where contamination is apparent, soils in areas to be planted should be analysed for structure and content by a specialist laboratory and expert advice taken on remediation measures for new planting if this is required. If contaminants (e.g. oil or diesel fuel, toxic materials, heavy metals, etc.) are present, soils should either be removed to the full depth for planting and new soil imported or expert advice obtained on remediation measures, which may include limiting the choice of species for planting. Where the structure of the soil is in an unsuitable condition to encourage growth, a number of remediation measures may be required including physical decompaction by mechanical plant or compressed air injection, the incorporation of bulky additive materials and new drainage systems. The advice of an arboriculturist should be sought for all works in the root protection area.

14.3 Surfaces around newly planted trees

NOTE BS 4428 provides recommendations for the treatment of soft surfaces, but excludes hard surfaces.

14.3.1 Where surfaces are paved, the settlement of the soil in tree pits which occurs gradually after planting may cause movement of the paved area. This may involve the partial collapse or instability of paving or disruption of flexible surfaces, where these are laid over prepared pits. The unpaved area around new plantings should, therefore, be of an adequate size to enable surrounding paving to be retained by a conventional edging and foundation (e.g. brick, concrete, stone or treated timber) set at a distance where it is unlikely to be affected by settlement. It may be appropriate for the outer edges of the backfilled area to be treated as a transition zone using interlocking surface reinforcement grids backfilled with a surface dressing of a permeable, granular material (e.g. gravels, shingles, other aggregates) which can be topped up if required. Due allowance should be made for the future growth of stem and roots of a tree when considering the finished dimensions and the design of edge or kerb treatments of tree pits and planted areas

Where load-bearing paving is to be laid over pits, it should either:

a) be laid when the soil has settled and the level made good; or:

b) be laid on a supported foundation that spans the tree pit; or

NOTE Such a foundation may be constructed from reinforced concrete, or comprise bearers made from steel or concrete.

c) incorporate a tree grille with appropriate support around the edges.

d) utilize structural soil.

14.3.2 Where there is any risk of a tree pit receiving surface water run off that may be contaminated, for example by rock salt, fuel spillages or other materials that may be toxic or harmful to plants, paving should be designed and laid to fall away from the pit.

15 Post development management

15.1 Existing trees

15.1.1 Trees growing on a site before development takes place may, if adversely affected, be in decline over a period of several years before they die. This varies greatly depending on the age, species and condition of the tree, the soil conditions, climate, and the extent of damage incurred during development. A programme of inspections and necessary work for the treatment of symptoms as they develop should be drawn up in conjunction with an arboriculturist. This programme may include recommendations for frequency of inspection and/or beneficial tree work and should take the form of an arboricultural management plan.

15.1.2 Where the trees in question are protected by planning controls, the planning authority should be informed and any necessary agreements obtained prior to such work.

15.1.3 Prior to handover, following completion of development, the arboriculturist should look for signs of intolerance to the change in conditions and the effect of the development and any accidental damage to identify the need for further tree works in addition to those originally specified at the beginning of the development process.

15.1.4 An arboriculturist should consider appropriate cultural operations. These may include irrigation, or measures to enhance the soil structure and organic nitrogen levels in the soil.

15.1.5 Where the development design incorporates the need for active management following the completion of construction works, a tree or landscape management plan should be prepared and a copy supplied to all parties who may have an interest in the future management of the site or parts of it.

15.2 New plantings

Maintenance of newly planted trees is of particular importance during the critical establishment period, of at least two years and may, where required by planning conditions, be five years or more following planting. A detailed maintenance schedule covering the establishment period should be prepared in conjunction with the landscape design proposals and appropriate arrangements made for its implementation.

Annex A (informative)
Trees and the law

A.1 General

Trees in any location may be protected by legislation. Where development is proposed, additional legal protection may be appropriate and can be enforced by the local authority. Attention is drawn to legal controls and liabilities under common law for consideration at the earliest stages of potential site development.

A.2 Legal protection for trees

A.2.1 The Town and Country Planning Act 1990 (as amended) [1] requires that, except in certain circumstances, "no work shall be carried out which will affect trees over a certain size which are situated in conservation areas". Six weeks' notice of intent has to be given to the local authority before the work is carried out. This provides an opportunity for the local authority to make a tree preservation order (TPO), under this Act, to protect the trees.

A.2.2 Tree preservation orders allow for trees to be protected either as individuals, groups, areas or woodlands. The orders have the effect of preventing the cutting down, topping, lopping, uprooting, wilful damage or wilful destruction of trees, except in certain circumstances, other than with consent of the local authority.

A.2.3 Even when no specific legal protection exists, it may be necessary to obtain a felling licence. These apply if the volume of timber exceeds specified amounts; site clearance, even of small areas, before detailed planning permission has been granted could exceed the felling licence quota. The Forestry Commission, under the Forestry Act 1967 (as amended) [2] administers felling licences.

A.3 Wildlife and habitat considerations

A.3.1 Para. 47 of Planning Policy Guidance Note 9: Nature Conservation [18] states that "the presence of a protected species is a material consideration when a local planning authority is considering a development proposal which, if carried out, would be likely to result in harm to the species or its habitat".

The Wildlife and Countryside Act 1981 (as amended) [3], the Conservation (Natural Habitats etc.) Regulations 1994 [4], and the Countryside and Rights of Way Act 2000 [5] protect species of flora and fauna.

A.3.2 The protection afforded to bats makes it illegal to intentionally injure or kill a bat, or to damage, disturb or obstruct access to a roost. As from 31 January 2001, under the Countryside and Rights of Way Act 2000 [5], it is an offence to recklessly disturb bats or recklessly damage or obstruct access to any structure or place that bats use for shelter or protection. Where bats are found to be present consultation needs to be carried out with the Statutory Nature Conservation Organization i.e. English Nature[2)], the Countryside Council for Wales[3)], Scottish Natural Heritage[4)] or Northern Ireland Environment and Heritage Service[5)] before starting any work.

Substantial penalties can be incurred for contravention of any of these forms of legal protection for trees and wildlife.

A.4 Legal protection for trees on development sites

A.4.1 Section 197 of the Town and Country Planning Act 1990 [1] states "it shall be the duty of the local planning authority to ensure, whenever it is appropriate, that in granting planning permission for any development adequate provision is made, by the imposition of conditions, for the preservation or planting of trees". It also states that "it shall be the duty of the local planning authority to make such orders under section 198 [of the Act] as appear to the authority to be necessary in connection with the grant of such permission."

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2) Contact English Nature at Northminster House, Peterborough PE1 1UA or www.englishnature.org.uk/contactlink.htm

3) Contact Countryside Council for Wales at www.ccw.gov.uk.

4) Contact Scottish Natural Heritage at 12 Hope Terrace, Edinburgh EH9 2AS or www.snh.org.uk.

5) Contact Northern Ireland Environment and Heritage Service at www.ehsni.gov.uk.

A.4.2 It is usually appropriate for a tree preservation order to be placed on trees that are an amenity and structurally sound. The effect of proposed development on trees protected by a tree preservation order ranks as a material consideration, which should be considered by the local authority when determining a planning application under section 70 of the Town and Country Planning Act 1990 [1].

A.4.3 Where a tree preservation order exists prior to planning permission being granted it should not normally be a block to effective use of a site. It serves to deter damage to or clearance of trees prior to planning permission being granted and provides a means of enforcing their protection during development work.

A.4.4 When planning permission is granted, planning conditions may be imposed to provide for the erection of protective fencing (see Clause **9**) and other measures for ensuring the well-being of trees during development.

NOTE It is considered inappropriate for planning conditions to be used to provide long-term protection to trees when tree preservation orders are available as a specific provision for this purpose.

A.4.5 Where circumstances require it, local authorities should apply a planning condition requiring the developer to appoint an arboriculturist to oversee the project. This person has a duty to monitor and confirm the implementation and maintenance of tree protection measures, as agreed with the local authority. Planning conditions may be imposed requiring tree planting to be undertaken as part of a project, and a tree preservation order can be made to apply to such trees once they have been planted so as to achieve their long term protection.

A.4.6 The consent of the local authority is not needed to carry out work on trees required to enable a person to implement a planning permission. Felling etc. cannot be said to be required when planning permission has been given on an outline application only, nor when development is exempt from planning control.

A.4.7 ***Enforcement of protection during development***

The effectiveness of measures to protect trees and ensure their healthy survival through development depends on co-operation between site owners, developers, contractors, arboriculturists and local authorities.

If the local authority considers that there has been a breach of planning conditions that provide for the protection of trees, it can serve an "enforcement notice"; if necessary this can be followed by a "stop notice" (Town and Country Planning Act 1990 [1], sections 172, 183, 184; *Planning policy guidance note 18: Enforcing planning control* [19]; *DoE Circular 10/97— Enforcing planning control: Legislative provisions and procedural requirements* [20]). When considering the need for such enforcement, local authorities should consider that trees can be damaged very easily (see Annex C) and that survival of trees is most likely to be achieved by maintenance of protection at all times.

A.4.8 ***Common law claims and litigation concerning trees***

A.4.8.1 *General*

Problems caused by trees on development sites can result in disputes giving rise to common law claims and litigation. Such problems are particularly likely where trees grow across boundaries between properties and cause damage to the property of a third party. For instance, root activity can affect structures other than those on the development site. The crowns, stems and roots of trees may have structural weaknesses, which if they fail, could result in damage to property or injury to people. Leaves and fruit falling from trees, obstruction of light and problems of poisonous plants have all been considered by the courts. Legal advice should be sought where trees may become a problem.

Careful planning and design should minimize the possibility of litigation after completion of the development.

A.4.8.2 *Planting adjacent to boundaries*

Problems with trees on or close to boundaries have resulted in litigation on many occasions, and the rights and responsibilities of tree owners and their neighbours are, in this respect, well documented in law. The government has published guidance on high hedges (*Hedge height and light loss* — ODPM, 2002 [21]) which advises on reasonable standards for evergreen hedges in domestic gardens. Careful consideration of new planting to anticipate both the likely encroachment of roots or overhang of branches of the fully grown tree relative to the site boundary can prevent potential future conflict, while the possibility of direct mechanical damage to boundary fences and walls can be avoided by allowing room for growth and movement (see Table 3).

Annex B (informative)
Useful contacts

This annex provides a list of organizations from whom additional advice can be obtained.

Ancient Tree Forum c/o Woodland Trust, Autumn Park, Dysart Road, Grantham, Lincolnshire NG32 6LL Tel: 01476 581135 Email: ancient-tree-forum@woodland-trust.org.uk Website: www.woodland-trust.org.uk/ancient-tree-forum	**Horticultural Trades Association (HTA)** Horticulture House, 19 High Street, Theale RG7 5AH Tel: 0118 930 3132 Email: info@the-hta.org.uk Website: www.the-hta.org
Arboricultural Advisory and Information Service Forest Research Station, Alice Holt Lodge, Wrecclesham, Farnham, Surrey GU10 4LH Helpline: 09065 161147 Tel: 01420 22022. Email: admin@treehelp.info Website: www.treehelp.info	**Institute of Chartered Foresters** 7A Colme Street, Edinburgh EH3 6AA Tel: 0131 225 2705 Email: icf@charteredforesters.org Website: www.charteredforesters.org
Arboricultural Association Ampfield House, Ampfield, Nr. Romsey, Hants SO51 9PA Tel: 01794 368717. Email: admin@trees.org.uk Website: www.trees.org.uk	**Institute of Civil Engineers** 1 Great George Street, London SWIP 3AA Tel: 020 7222 7722 Email: secretariat@ice.org.uk Website: www.ice.org.uk
British Association of Landscape Industries (BALI) Landscape House, Stoneleigh Park, National Agricultural Centre, Warwick CV8 2LG Tel: 0870 770 4971 Email: contact@bali.org.uk Website: www.bali.co.uk	**Institute of Leisure and Amenity Management** Lower Basildon, Reading, Berks RG8 9NE Tel: 0491 873558 Email: info@ilam.co.uk Website: www.ilam.co.uk
Building Research Establishment Garston, Watford, Herts WD25 9XX Tel: 01923 664000 Email: enquiries@bre.co.uk Website: www.bre.co.uk	**Institution of Structural Engineers** 11 Upper Belgrave Street, London SWIX 8BH Tel: 020 7235 4535 Fax: 020 7235 4294 Website: www.istructe.org.uk
Commission for Architecture and the Built Environment (CABE) The Tower Building, 11 York Road London SE1 7NX Tel: 020 7960 2400 Email: enquiries@cabe.org.uk Website: www.cabe.org.uk	**International Society of Arboriculture, UK and Ireland Chapter** 148 Hydes Road, Wednesbury, West Midlands WS10 0DR Tel: 0121 556 8302 Email: enquiries@isa-uki.org Website:www.isa-uk.org

Useful contacts (*continued*)

Landscape Institute 33 Great Portland Street, London W1W 8QG Tel: 020 299 4500 Email: mail@l-i.org.uk Website: www.l-i.org.uk	**Royal Institution of Chartered Surveyors** 12 Great George Street, London SWIP 3AD Tel: 0870 333 1600 Email: contactrics@rics.org Website: www.rics.org
National House Building Council Buildmark House, Chiltern Avenue, Amersham, Bucks. HP6 5AP Tel: 01494 735 363 Website: www.nhbc.co.uk	**Royal Town Planning Institute** 41 Botolph Lane, London EC3R 8DL Tel: 020 7929 9494 Email: online@rtpi.org.uk Website: www.rtpi.org.uk
Royal Institute of British Architects (RIBA) 66 Portland Place, London W1B 1AD Tel: 020 7580 5533 Email: info@inst.riba.org Website: www.riba.org	

Annex C (informative)
Damage to trees

C.1 General

C.1.1 Trees that have good health and stability are well adapted to their surroundings. Any development activity which affects the adaptation of trees to a site could be detrimental to their health, future growth and safety. Tree species differ in their ability to tolerate change but all tend to become less tolerant after they have reached maturity or suffered previous damage or stress. Planning and subsequent site management should aim to minimize the effect of change.

C.1.2 The part of a tree most susceptible to damage is the root system, which, because it is not immediately visible, is frequently ignored. Damage to, or death of the root system affects the health, growth, life expectancy and safety of the entire tree. The effects of such damage may only become evident several years later. Damage may be the result of a number of insignificant but compounding factors that accumulate over time.

C.1.3 Damage to the stem and branches of a tree is not usually sufficient to kill the tree directly but may make it unsafe by affecting the weight of distribution of the crown or by facilitating decay in the long term. Such damage may also be disfiguring.

C.2 Extent and form of the root system

C.2.1 The root system is typically concentrated within the uppermost 600 mm of the soil, although it may be deeper within the dense mass of roots and soil close to the base of the tree. Within a short distance of the stem the roots are highly branched, so as to form a network of small-diameter woody roots, which typically extend radially for a distance much greater than the height of the tree, except where impeded by unfavourable conditions. All parts of this system bear a mass of fine, non-woody absorptive roots

C.2.2 The root system does not generally show the symmetry seen in the branch system. The development of all roots is influenced by the availability of water, nutrients, oxygen and soil penetrability. As far as these conditions allow, the root system tends to develop sufficient volume and area to provide physical stability.

C.2.3 The uptake of water and mineral nutrients by the root system takes place via the fine roots, typically less than 0.5 mm diameter. Their survival and functioning — which are essential for the health of the tree as a whole — depend on the maintenance of favourable soil conditions. The fine roots are short-lived, with the majority dying each winter and with fresh ones developing in response to the needs of the tree.

C.2.4 All parts of the root system, but especially the fine roots, are vulnerable to damage. Once roots are damaged, water and nutrient uptake is restricted until new ones have grown. Mature and over-mature trees respond slowly, if at all, to damage of their woody roots.

Annex D (informative)
Example tree survey pro forma

This annex provides an example of a tree survey pro forma.

TREE SURVEY SCHEDULE

Client:

Site:

Date of Survey:

Arboricultural Consultant/Surveyor:

Tagged:

Weather:

See explanatory notes at 4.2.6

Tree reference number	Species	Height m	Stem diameter mm	Branch spread m	Height of crown clearance m	Age class	Physiological condition	Structural condition	Preliminary management recommendations	Estimated remaining contribution years	Category grading
1				N E S W							
2				N E S W							
3				N E S W							
4				N E S W							

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[8)] Contact: NJUG Ltd, 59-60 Russell Square, London WC1B 4HP info@njug.demon.co.uk

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Green light for plan to build garden homes

by TOM FOOT

TWO new houses will be built in Arkwright Road – believed to be the first in more than 50 years.

Planning chiefs approved the plans for a back garden development in a Hampstead conservation area last month despite 63 objections.

The modern-style houses – with green roofs and solar panels – would be built on garden space to the rear of two detached mansion flat blocks with access along a small lane.

The Redington Frognal Neighbourhood Forum warned the decision would "set a precedent for future developments".

Barbara Dohmann – on behalf of the forum – told the meeting: "There has been no recent urban development in this area. I have lived there for 51 years … I represent many of the neighbours who are seriously and deleteriously affected. It is unacceptable."

They described a lane that construction rubble would be taken down by conveyor belt as "absolutely miniscule" while closing off part of the road during construction was "impossible to conceive".

Conservative councillor Henry Newman had told the council the development would "lead to an unacceptable loss of valuable open green space, including trees and other mature planting" while Conservative group leader Cllr Oliver Cooper said he was "deeply concerned about precedent this is setting for this site".

Lib Dem councillor Flick Rea said: "We in Camden have had an absolute prohibition on backland development. We didn't allow people to hive off the back end of their gardens to make a nice profit on. We preserved a number of back lanes and mews developments."

Danny Beales: Not 'the end of the world'

But Labour's Cllr Danny Beales questioned whether the development would in fact be "the end of the world", adding that a construction management plan should prevent any impact on the public.

Officers had recommended granting permission with Section 106 payments and additional tree conditions.

The application is from Sascha Shinder and Nicholas Shinder, who own adjoining homes, while the architects are Square Feet Architects.

Neil Fletcher, agent for the applicant, told the meeting: "Square Feet has been consulting about this site with Camden for some time. This was a collaborative process initially to establish feasibility on this site that has led to an appropriate scheme.

A similar plan for three houses on the site was scrapped in 2016.