

Canopy targets and local development plans

17th September 2026



Housekeeping

- We will be recording, presentations and links will be shared
- For Q+A
 - Please raise your hand to come in to speak
 - Otherwise use the Q+A function on teams
- For technical issues please use the MS Teams chat function



Agenda

Urban tree canopy cover, Forestry and Woodland Strategies and the LDP process

Bob Frost, Scottish Forestry

Urban canopy targets & LDPs – A summary of the current position in Scotland

Guy Harewood, Forth Climate Forest

Midlothian Council draft LDP urban canopy target

Emma Hay, Midlothian Council

Making an urban canopy target work

James Gregory, Cornwall Council

Evolving use of canopy cover assessments in major planning applications

Sharon Durdant-Hollamby, Sharon Hosegood Associates

Looking beyond new developments - how do we secure canopy expansion where it's needed most?

Anna Perks , Woodland Trust Scotland





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“Urban trees need planners”

Urban Tree Canopy and Local Development Plans
webinar 17 September

Bob Frost, Scottish Forestry



Scottish Government
Riaghaltas na h-Alba

Scottish Forestry is the Scottish Government agency responsible for forestry policy, support and regulation
Is e Coilltearachd na h-Alba a' bhuidheann-ghnìomha aig Riaghaltas na h-Alba a tha an urra ri poileasaidh,
taic agus riaghladh do choiltearachd

forestry.gov.scot

“What does a town planner do?”

“A town planner manages the development and design of cities and towns.

*Their primary goal is to **achieve sustainability** by balancing economic growth and housing needs with environmental protection and community well-being”*

The Royal Town Planning Institute

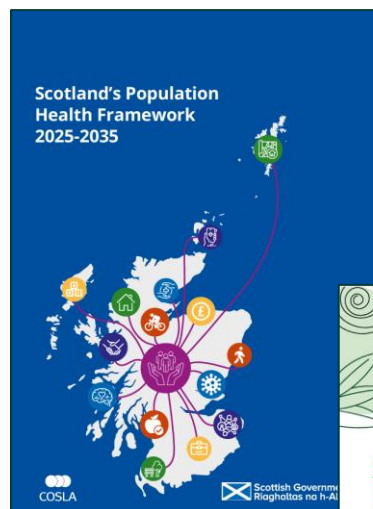
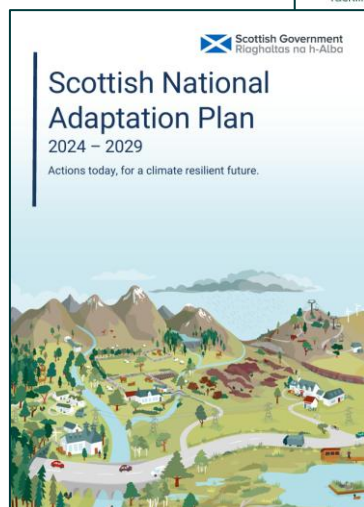
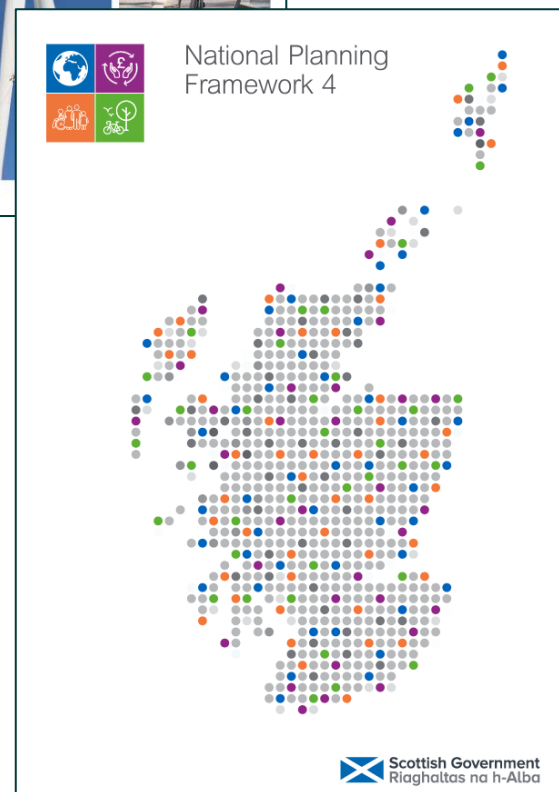


Programme for Government 2026-2031

“We will enhance climate resilience and biodiversity through coastal adaptation measures and **increasing tree canopy cover across our towns and cities.**”



Policy framework



Sustainable places

Policy 2: Climate mitigation and adaptation

Policy 3: Biodiversity

Policy 4: Natural places

Policy 6: Forestry, woodland and trees

Policy 8: Green belts

Liveable places

Policy 14: Design, quality and place

Policy 15: Local living and 20-minute neighbourhoods

Policy 20: Blue and green infrastructure

Policy 21: Play, recreation and sport

Policy 22: Flood risk and water management

Productive places

Policy 25: Community Wealth Building

NPF4 policies



Current delivery



Tree sponsorship



Challenges



Empower: working with local communities

Decision makers: local political support

Loss of canopy: through development

Time: creating canopy cover is not instant

Public perceptions: not all tree lovers

Land availability: planting sites

Skills and expertise: planners, tree officers, road engineers etc

Management: on-going commitment from landowners

Loss of larger trees: usually older with larger canopies

Delivery: Limited staffing capacity limits to develop tree planting projects

Funding: significant cost to plant and maintain urban trees Build partnerships: avoid siloed working

Value: urban trees as assets rather than liabilities

Competing priorities: avoid the either, or – “better places”



Opportunity: local development plans



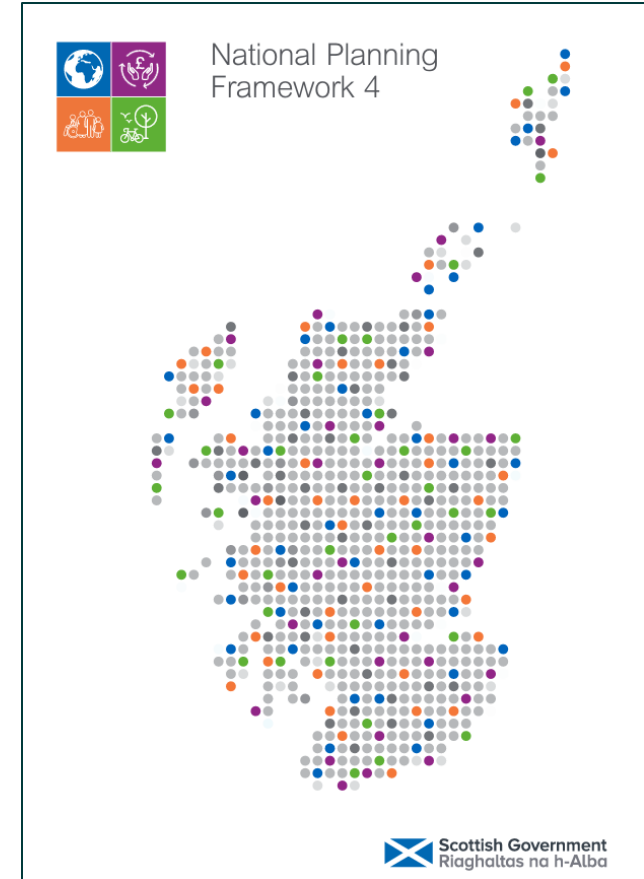
Planning (*'place making'*)

- LDP/FWS = local policies (NPF4)
- Integration (green, blue, grey infrastructure)
- Development management



Better places (Qualities of Successful places)

- Healthy: “...improving physical and mental health”
- Pleasant: “..attractive natural and built spaces..”
- Sustainable: “..climate resilience...integrating nature positive biodiversity solutions...”

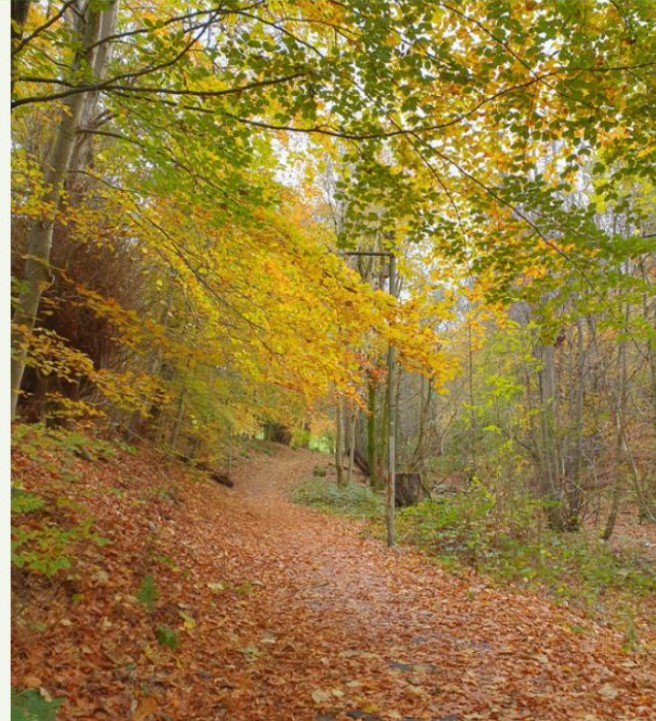


Local Development Plans: Forestry and Woodland Strategies

7. Vision for 2034

7.1 The following is the vision for trees and woodlands in Glasgow in 2034:

- Glasgow's urban area has 20% canopy cover, thereby meeting the Clyde Climate Forest target, and **Bridgeton, Dalmarnock, Govan, Levern and District and Possilpark**, in particular, have increased canopy cover levels.
- Through increased canopy cover vacant and derelict sites contribute to meeting the net zero target, enhancing biodiversity, and increasing the attractiveness of communities.
- Canopy cover provides multiple benefits to Glasgow's residents and visitors and enhances local neighbourhoods; and will connect green networks/nature networks.



Glasgow City Council: FWS 2025



8.3 Encourage urban planting and the creation of woodlands close to settlements



National policy places importance on the health and well-being of communities. NPF4 includes policies on sustainable and liveable places, the creation of 20-minute neighbourhoods and active travel.

Moray Council: FWS 2025



What would help?

Would it be useful to add information on urban canopy cover to the FWS technical guidance?

If so, what information would be helpful?



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Thank you



Benefits of urban trees



1
Cool the air



2
Filter urban
pollutants



3
Increase
property values



4
Increase urban
biodiversity



5
Improve physical
and mental health



Food and Agriculture
Organization of the
United Nations



Scottish Government
Riaghaltas na h-Alba

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taic agus riaghladh do choiltearachd*

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Urban Canopy Targets & LDPs – A summary of the current position in the Forth Valley

Guy Harewood
Development Officer



What is the Forth Climate Forest?

A tree planting initiative to combat the twin crises of climate change and biodiversity loss. Focussed on 4 main themes:

A sustainable Scotland values and protects our natural environment.

Forestry & Native Woodlands

We will expand Scotland's native woodlands through funding 18,000 ha of woodland creation annually by 2029, with at least 40% of new native woodland by 2045. To protect our native woodlands from threats we will support firm deer control incentives, implement a national deer management and venison. We will also complete the National Register of Ancient Woodland, and strengthen biosecurity among other actions.

We will set an ambitious target of 23% canopy cover in urban areas to drive action to increase planting and build on our existing work to encourage an increase in tree canopy cover in urban areas.

COMMUNITIES

Increase knowledge and appreciation of the importance of trees

CANOPY

Increase urban tree canopy to 20%

CONNECTIVITY

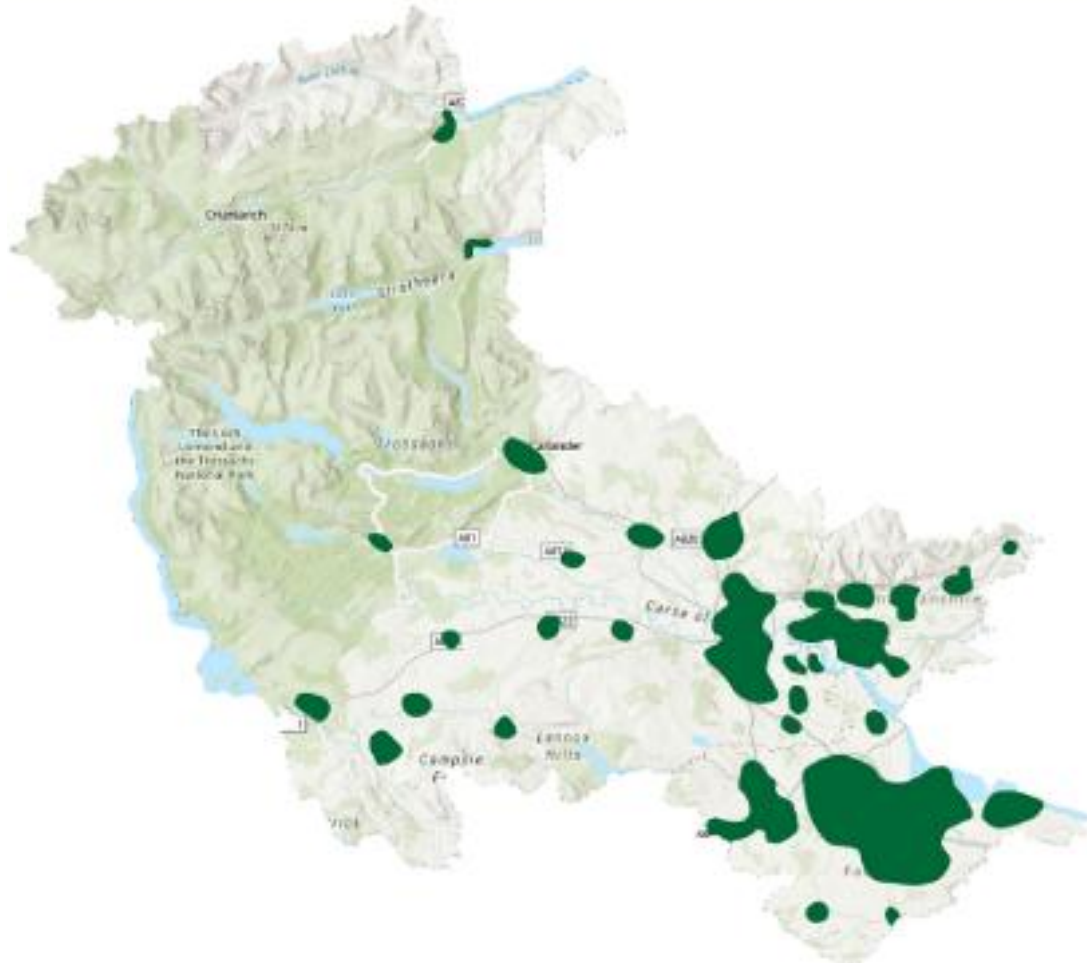
Create 60 new woodland connections

CARBON

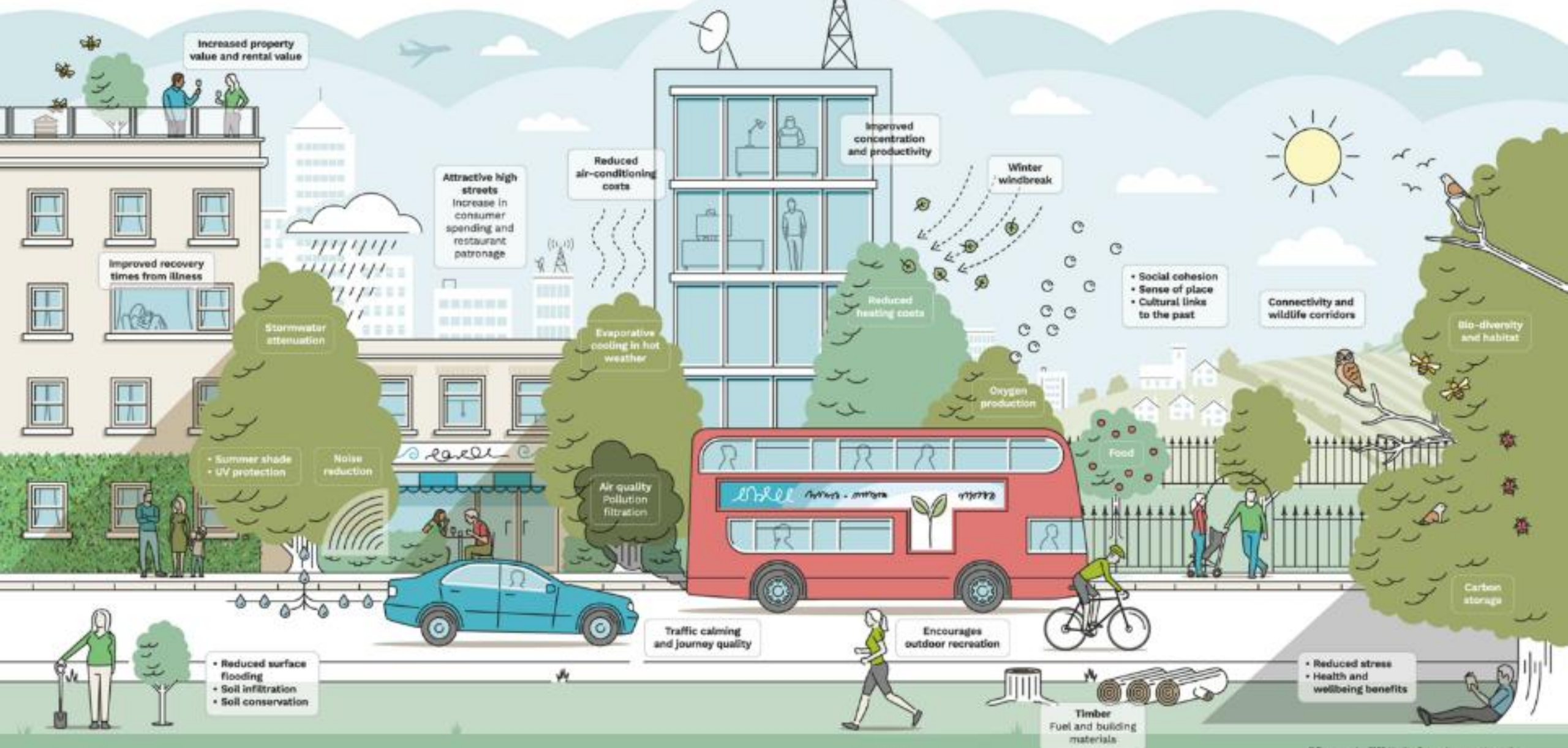
Plant 16 million trees (8000 hectares)
Increase overall woodland cover by 3%

[The Canopy Cover of England's Towns and Cities](#): baselining and setting targets to improve human health and well-being

Increasing the urban tree canopy



The Benefits of Trees



Increasing the urban tree canopy



Why LDPs?

- Integrating with Plans, Policies and Strategies
- Protect existing canopy cover
- Ensure development contributes

Current Position

- Engaging with all 4 planning authorities
- Keen to see policy included that specifies expected level of canopy cover
- We have shown that it is feasible
- Influenced by other policy examples
- Interest beyond the Forth Valley

Cornwall Council Policy G3 – 15%

Oxford County Council Policy 21 & 22 – 30% increase

Wycombe District Council – 25%



Thanks for listening

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Mob: 07387 136 793

**Oak trees within the University of
Stirling grounds**

Forth Climate Forest 



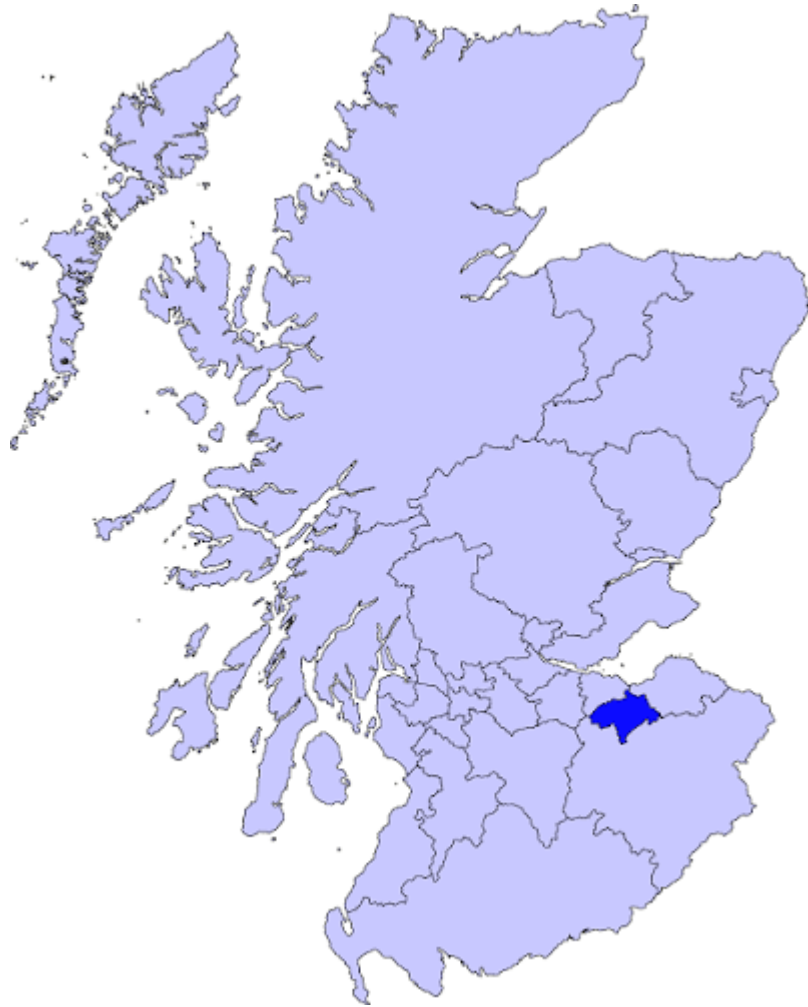
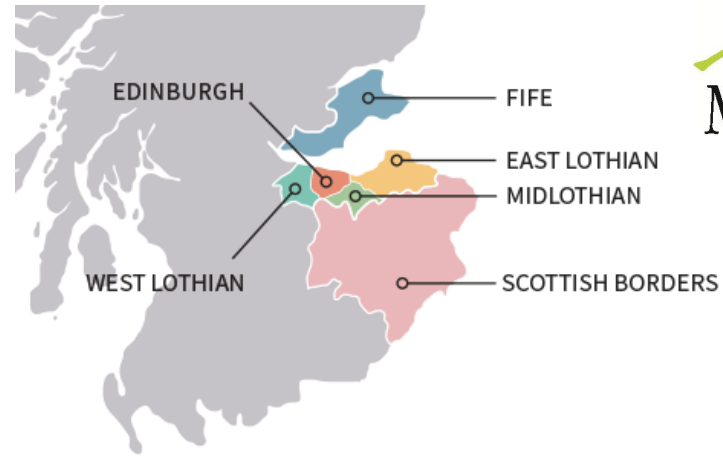
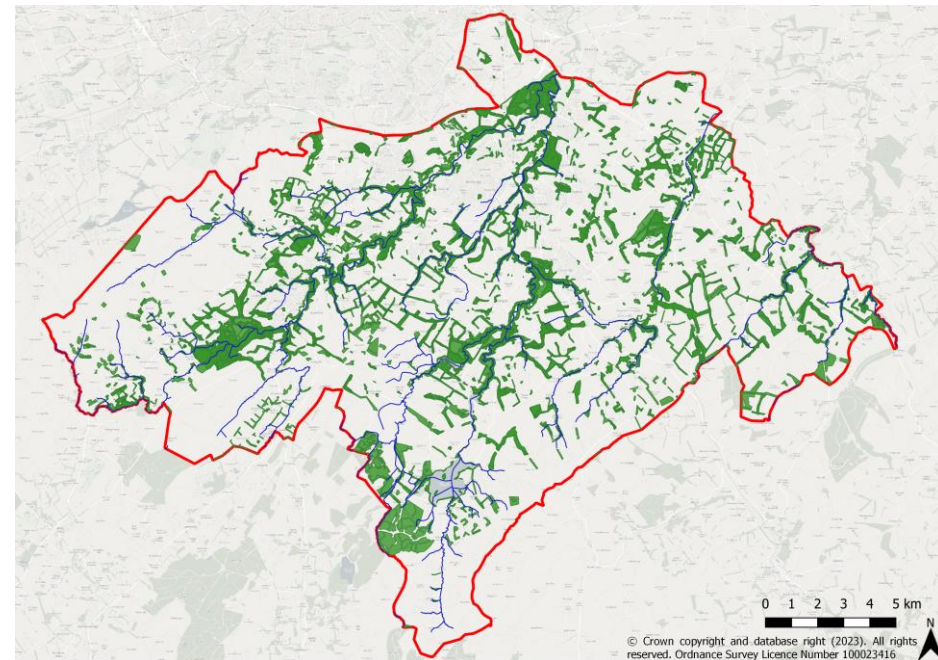
Midlothian

URBAN TREE CANOPY AND LOCAL DEVELOPMENT PLANNING WEBINAR

17 September 2026

Emma Hay – Midlothian Council

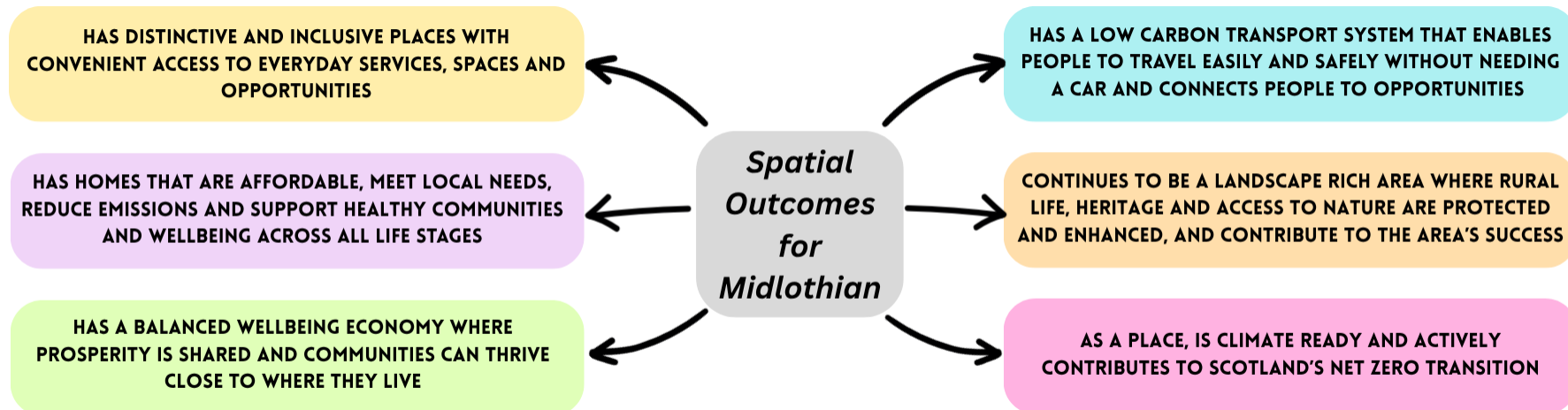
www.midlothian.gov.uk/mldp2



Proposed MLDP2



- Proposed Plan published 30 June 2026
- Consultation period ends 25 September
- NPF4 + MLDP2 = “the development plan”



Proposed MLDP2 - Trees

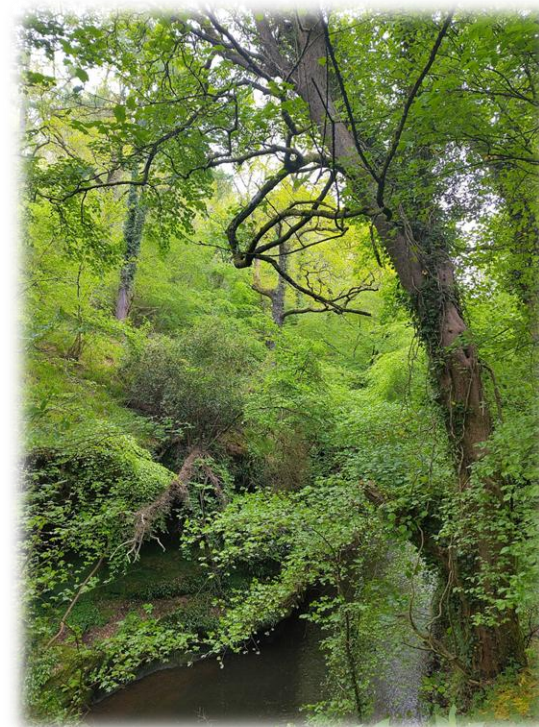


Context

- NPF4 Policy 3 – Biodiversity & Policy 6 – Forestry, Woodland and Trees
- 2020 iTree canopy cover study results – 12% for whole of Midlothian, ranging from 8.5% to 15.5% in individual wards
- LBAP & draft FWS
- Community value of urban trees

Relevant MLDP2 Policies

- STR2 – Climate Change Mitigation and Adaptation
- DES2 – Design, Layout and Landscape Standards
- DES3 – Biodiversity and New Development
- DES4 – Urban Greening Factor
- DES5 – Open Space Standards
- DES9 – Trees and Hedgerows in New Development
- INF1 – Blue and Green Infrastructure
- LOC5 – Community Growing Spaces
- ENV1 – Midlothian Nature Network
- ENV9 – Forestry and Woodland Planting



Proposed MLDP2 - Trees



Policy DES9 – Trees and Hedgerows in New Development

Development must be designed to retain, protect and integrate with existing hedgerows, trees and woodland.

The Council opposes any pre-emptive felling in advance of a planning application which results in the loss of existing hedgerows, trees and woodland. Where hedgerows, trees or woodland are lost through pre-emptive felling or will be unavoidably lost as a result of development, the Council will require compensatory planting on site at a level equal to twice the canopy cover removed.

For sites where trees, woodland or vegetation has been cleared pre-emptively, the Council expects that ecological assessments carried out relating to the site must quantify the amount removed and assess the site in its pre-clearance state.

Development sites over 0.5ha required to achieve a future canopy cover of 21% (at 20 years after planting) through the retention and planting of trees. If this cannot be achieved, other green infrastructure which will deliver equivalent benefit will be required which maximised the use of trees. On sites where there has been pre-emptive felling, the compensatory planting will be in addition to the canopy cover target.

Woodland buffers are required where a development site:

- has a boundary on a settlement edge,*
- Is visually prominent in the landscape, and/or*
- Is adjacent to an existing or planned land use which would benefit from visual screening.*

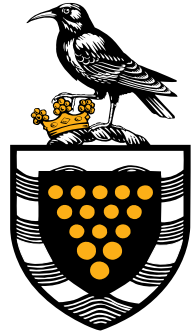
Buffers must be a minimum of 15 metres in width and be designed to function as an ecological corridor, allow for future growth of the trees and allow for pedestrian access to wider path networks beyond the site. A buffer should be calculated from the edge of the canopy area or edge of root protection area, whichever is greater. A woodland buffer may include woodland edge planting.

Planted buffers are required for existing woodland and groups of trees within or adjacent to a development site to limit disturbance and degradation of existing habitats. For ancient and semi-natural ancient woodland, the buffer must be a minimum of 30 metres in width. For all other woodland and groups of trees, the buffer must be a minimum of 5 metres in width. Buffers must not contain built form or infrastructure, private outdoor space for dwellings or utilities.



Midlothian

Questions



CORNWALL
COUNCIL
one and all • onen hag oll

Canopy Calculator

James Gregory
Dip Arb L6 (ABC) MArborA
Tree Officer



Climate Emergency Development Plan Document

February 2023



Woodland, wildflowers and flooding

Strategic Planning
towlenna stratejek

Policy G3 – Canopy

All major development should provide, through the retention of existing and or / the establishment of new, canopy coverage equal to at least 15% of the site area (excluding areas of the site that are priority habitat types) in accordance with a Cornwall Council approved calculator or metric.

- 1) Any proposal to remove canopy on the site should be justified in accordance with the canopy mitigation hierarchy.
- 2) Where a pre-development site already contains canopy that exceeds the 15% requirement, the development proposal should ensure the retention of as much canopy as possible on site in line with the mitigation hierarchy and should justify the losses proposed. An alternative canopy cover percentage, as evidenced by a council approved canopy metric, should be agreed with the Local Authority.
- 3) Where there are significant ecological, historical, landscape or operational reasons to justify a canopy requirement of less than 15% on site and this can be fully evidenced, an alternative percentage of canopy provision shall be agreed with the Council.
- 4) Minor development sites (with the exception of householder development and Change of Use (not creating new dwellings or additional floorspace) are not required to demonstrate the 15% canopy target but should explore all options in relation to canopy provision, and take appropriate measures to both avoid or reduce harm to existing onsite trees. Proposals shall include where appropriate and practicable provision of new canopy.
- 5) New canopy should provide a mix of species that are resilient to pests, diseases and climate change and should be delivered in sustainable locations, in a manner that supports the growth and spatial requirements of canopy. New canopy should positively contribute to the climate resilience of the site in a manner which protects and enhances existing canopy.

Policy G3

Cornwall Climate Emergency DPD

- ▶ *“Trees provide valuable habitats for wildlife and contribute to the wider landscape and the overall amenity of development.*

While all trees absorb carbon dioxide in the atmosphere, the right trees in the right places also provide wide ranging resilience to climate change by soaking up excess rainwater, filtering air pollution, reducing noise pollution and cooling the urban environment during periods of excess heat.”

- ▶ The aim of the Canopy Policy is to ensure that appropriate levels of canopy are well integrated into development proposals. It does through:
- ▶ Prioritising the retention of existing trees
- ▶ Use of a Canopy Calculator for major development
- ▶ Requirement of climate resilient species choice for proposed canopy

Overview

Working Canopy Calculator from High Wycombe (adapted for Cornwall)

- ▶ Brings best practice into planning policy
 - ▶ More weight for trees in planning process
 - ▶ Gives arboricultural matters earlier consideration in development
 - ▶ Gives a clear benchmark and level playing field
-
- ▶ The Canopy Calculator is a requirement for major developments only.
 - ▶ It measures the spread of above-ground canopy and projects the canopy growth of tree species over a 25-year period.
 - ▶ The required percentage by the end of 25 years is a minimum 15%.

What is Canopy?

- ▶ individual trees
- ▶ groupings/arrangements of trees



- ▶ existing native hedgerows, including those atop Cornish hedge
- ▶ new native hedgerows **within** public realm
- ▶ **selected** scrub
- ▶ **all** woodland habitats (UK Habitat Classification System)

What is NOT Canopy?

- ▶ **limited** woody scrub
- ▶ non-native shrub hedgerows (e.g. garden boundaries)
- ▶ New native hedgerows **NOT within** public realm (i.e. domestic garden borders)



- ▶ green walls and roofs.

What is Canopy?

Level 1	Level 2 code	Level 2 Label	Level 3 code	Level 3 Label	Level 4 code	Level 4 Label (Priority Habitats in Bold)	Level 5 code	Level 5 Label (Including Annex 1 Habitats)
Terrestrial	w	Woodland and forest	w1	Broadleaved mixed and yew woodland	w1a	Upland oakwood	w1a5	Western acidic oak woodland (H91A0)
					w1b	Upland mixed ashwoods	w1b5	Lime-maple woodlands of rocky slopes (H9180)
					w1b6		w1b6	Other upland mixed ashwoods
					w1c	Lowland beech and yew woodland	w1c5	Beech forests on acid soils (H9120)
							w1c6	Beech forests on neutral to rich soils (H9130)
							w1c7	Yew-dominated woodland (H91J0)
							w1c8	Natural box scrub (H5110)
					w1d	Wet woodland	w1d5	Alder woodland on floodplains (H91E0)
					w1e	Upland birchwoods	w1d6	Bog woodland (H91D0)
					w1f	Lowland mixed deciduous woodland	w1f5	Dry oak-dominated woodland (H9190)
							w1f6	Oak-hornbeam forests (H9160)
					w1g	Other woodland; broadleaved	w1f7	Other Lowland mixed deciduous woodland
							w1g6	Line of trees
					w1h	Other woodland; mixed	w1g7	Other broadleaved woodland types
							w1h5	Other woodland; mixed; mainly broadleaved
	h	Heathland & shrub	w2	Coniferous woodland	w1h6	Other woodland; mixed; mainly conifer	w1h6	Other woodland; mixed; mainly conifer
					w2a	Native pine woodlands	w2a5	Caledonian forest (H91C0)
					w2b	Other Scot's Pine woodland		
					w2c	Other coniferous woodland		
			h2	Hedgerows	h2a	Hedgerow (priority habitat)		
			h3	Dense scrub	h3a	Blackthorn scrub	h3a5	West coast blackthorn scrub
					h3b	Hazel scrub	h3a6	Other blackthorn scrub
					h3f	Hawthorn scrub	h3b5	Atlantic hazel
					h3h	Mixed scrub	h3b6	Other hazel scrub

- Definition table included in Cornwall Council Canopy Written Guidance

Policy G3:

“All major development should provide, through the retention of existing and or / the establishment of new canopy, coverage equal to at least 15% of the site area (excluding areas of the site that are priority habitat types) in accordance with a Cornwall Council approved calculator or metric.”

Why 15%?

- ▶ 15% recommended for coastal areas by the Forestry Commission
- ▶ Existing Cornish Parish average Canopy coverage is 10%
- ▶ Achievable minimum figure
- ▶ Drives up delivery on low performing sites



Existing canopy above 15%

“Where a pre-development site already contains canopy that exceeds the 15% requirement, the development proposal should ensure the retention of as much canopy as possible on site in line with the mitigation hierarchy and should justify the losses proposed.

An alternative canopy cover percentage, as evidenced by a council approved canopy metric, should be agreed with the Local Authority.”

“Any proposal to remove canopy on the site should be justified in accordance with the canopy mitigation hierarchy.”



Less than 15% outcomes

“Where there are significant ecological, historical, landscape or operational reasons to justify a canopy requirement of less than 15% on site and this can be fully evidenced, an alternative percentage of canopy provision shall be agreed with the Council.”

Where 15% canopy cover might not appropriate:

- ▶ Significant impact on heritage assets / heritage areas
- ▶ Significant impact on a designated landscape
- ▶ Solar farms
- ▶ Aviation sites

- ▶ Ecological:
- ▶ A significant impact on
 - the balance of net gain (disproportionate canopy)
 - provision of a 10% net gain onsite
 - priority and protected habitats
 - rare and/or protected species

Minor Development

“Minor development sites ***are not required to demonstrate the 15% canopy target*** but should explore all options in relation to canopy provision and take appropriate measures to both avoid or reduce harm to existing onsite trees.

Proposals shall include where appropriate and practicable provision of new canopy.”

New Canopy

“New canopy should provide a mix of species that are resilient to pests, diseases and climate change and should be delivered in sustainable locations, in a manner that supports the growth and spatial requirements of canopy.

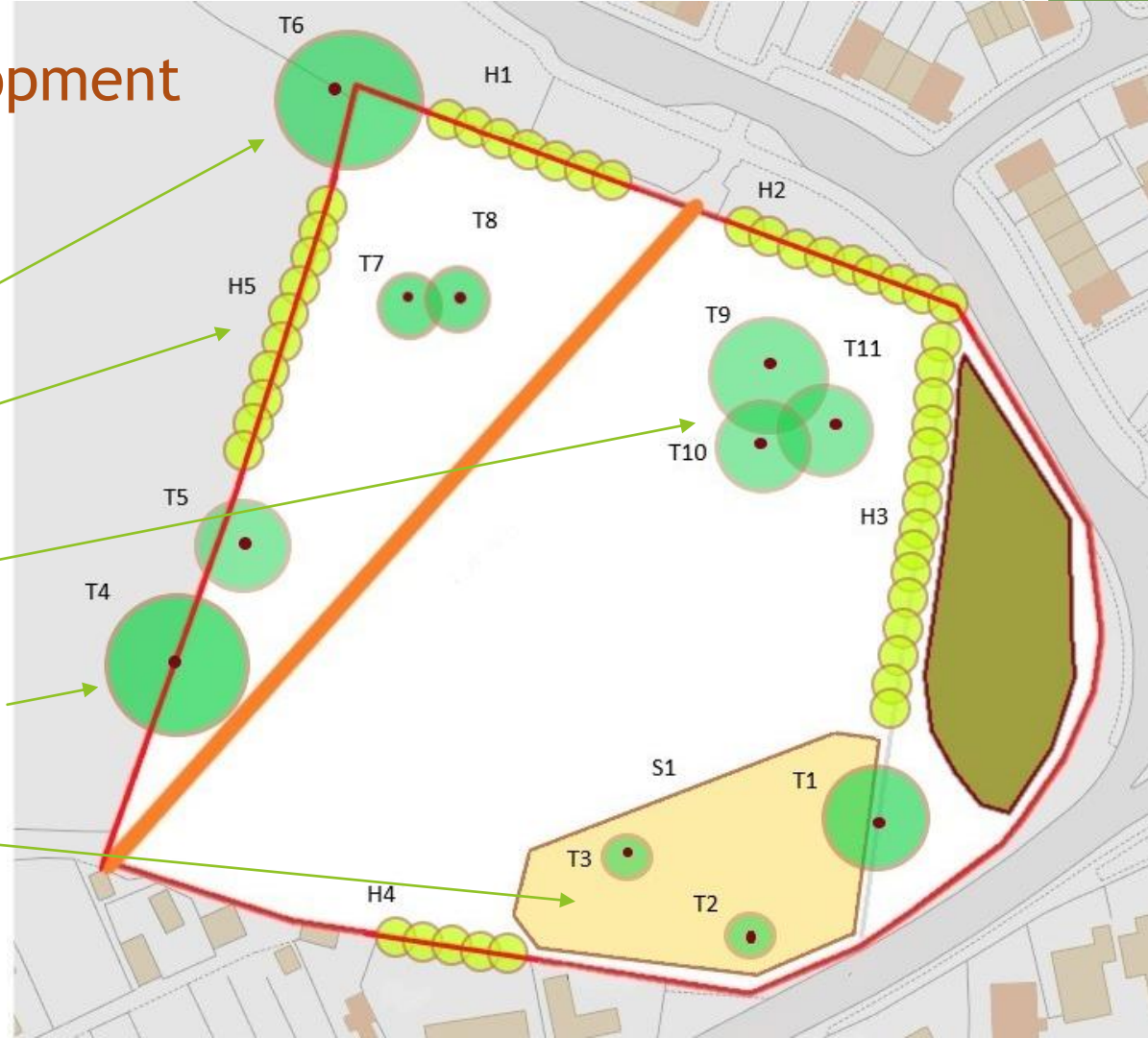
New canopy should positively contribute to the climate resilience of the site in a manner which protects and enhances existing canopy.”

What does it mean for planning process?



Example Pre-development Site:

- Trees offsite
- Hedgerows
- Trees onsite
- Tree on boundary
- Scrub Habitat



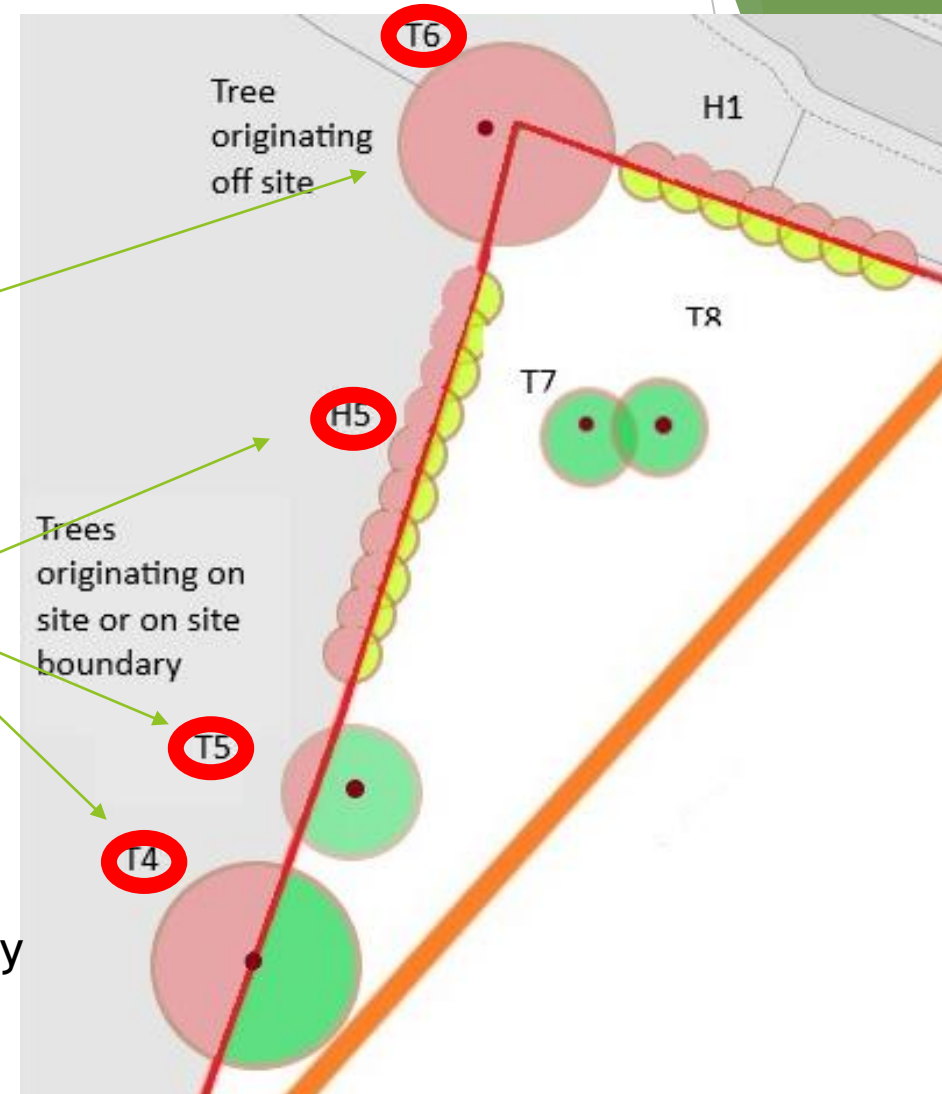
Only canopy that is retained or established
within the application site

(e.g. red line boundary*) is counted as canopy.

**** If the redline boundary exceeds area outside of the application influence/control then only the area within the applicant influence is to be counted***

When is canopy considered outside the site?

- Tree T6 originates outside site
- Overhangs inside site
- **Does not count as canopy provision**
- T4, T5 and H5 originate within site
- Overhangs outside site
- **Deduct overhang outside site**
- If the redline boundary exceeds area outside of the applicants influence/control or if the area is for proposed future development, then only the area within the application influence is to be counted



Does canopy within private gardens count towards canopy provision?

- ▶ No
- ▶ While we welcome the inclusion of trees in private areas, it cannot be assumed that trees planted in private amenity space will be retained post occupation of incoming residents, as these areas will then be outside of the developer's control.
- ▶ A well-designed site layout in line with guidance in the NPPF should be providing adequate street trees and green open spaces to easily achieve the required 15% without the need for use of private amenity spaces for tree planting.

Example Post Development Site: Typical Canopy Plan

- Retained Boundary hedgerows
- Retained Boundary Tree
- Retained Internal Hedgerows
- New internal hedgerows
- New Tree Group
- New scrub Habitat
- New Garden Trees (do not count to canopy score)
- New Street Trees
- New Open Space Trees



What will it secure for residents & communities?

Green sites

Shaded streets,
improved air
quality &
reduced flooding

Mental well-
being

Sequestering
carbon

Wildlife on
doorsteps and in
workplaces

Increased
property values

What does it mean for developers?

Explicit recognition
at local policy level
of value of canopy

Clear minimum
expectation for
levels & types of
canopy provision

Supporting guidance
around provision

A need for earlier
consideration of
canopy - constraints
& opportunities

Increased liaison
within their project
team and consultants

Need to submit two
additional
items/drawings for
all major
applications

What does it mean for arboricultural consultants?

Earlier
commissioning,
and greater
liaison

Clear
expectation and
guidance to
respond to

A need to be
mindful of
ecology &
survey data

Support in
securing soils
and rooting
volumes

Potentially
additional work

What does it mean for tree officers?

Clear canopy
provision
requirement and
supporting policy

Earlier consideration
of trees, spatial
conflicts and of
rooting/soil volumes
required

Two additional
documents to review
at consultation

Recommendation of
appropriate pre-
commencement
planning conditions

Usage of the Canopy Calculator

- ▶ To be operated by arb professional, ecologist and /or landscape architect
- ▶ Excel Document
- ▶ Measures canopy above ground NOT Root Protection Area
- ▶ Contains figures for average canopy spread of the majority of tree species
- ▶ Calculates canopy spread at year 25 (to be shown on a projected canopy plan)
- ▶ Measures tree groupings
- ▶ Calculates what percentage of site will have canopy cover in year 25

Cornwall Canopy Calculator
Version 2.5

1. Site Summary

Site Name/ Address:	123 Development Road, New Town, Cornwall	Applicant:	Mr A. P. Pissant
Date:	11/04/2024	Assessor:	Mr. Nyan

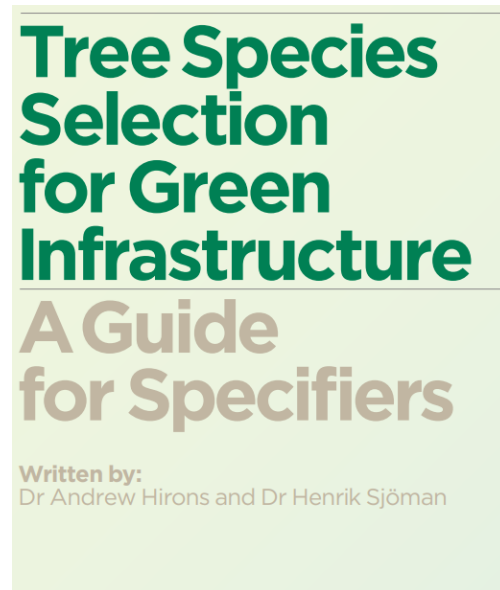
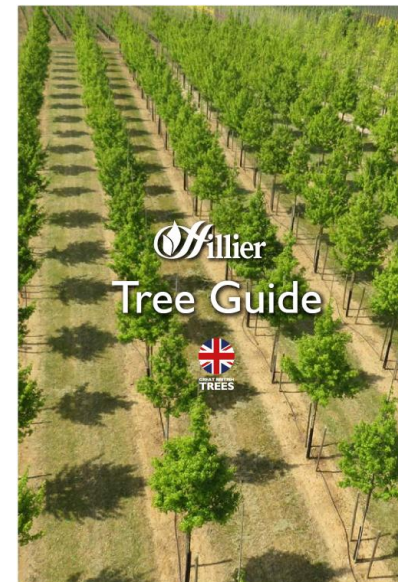
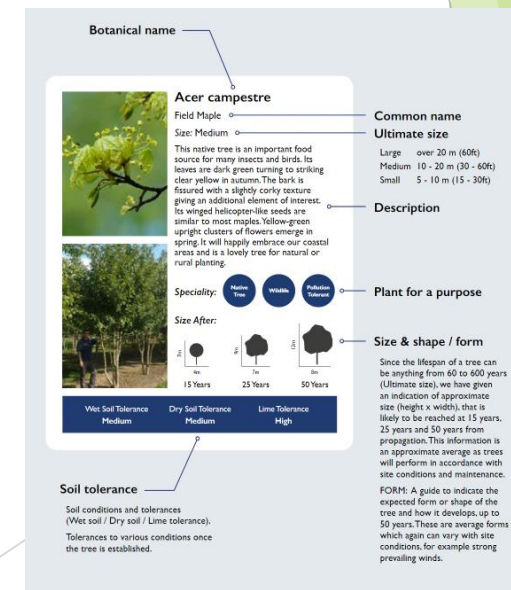
	Area m ²	% of net site area	Comments
Application site area:	15580		2 x agricultural fields
Retained priority habitat excluded from site area:	1153		Priority habitat for exclusion: Lowland meadow (gla5)
Other area excluded from red edge area:	1072		High pressure gas main and way leave/corridor
Net site area:	13363	100.0%	
Canopy provision requirements:	2322	17.4%	
Provision via retained canopy:	1,152	8.6%	
Provision via new canopy:	1,305	9.7%	
Canopy provision total:	2,455	18.4%	
Canopy provision balance:	108	1.0%	

KEY	
Enter value	
Drop-down menu	
Calculation	
Automatic lookup	
Result	

0. User Instructions 1. Site Summary 2. Retained Canopy 3. New Canopy 4. Species List 5. Look Up Tables

Data extrapolated from a number of sources including:

- Environmental tolerance - Hiron, A.D. and Sjöman, H. (2018) Tree Species Selection for Green Infrastructure: A Guide for Specifiers. Trees and Design Action
- Group Canopy Values and Growth Rates - The Hilliers Tree Guide 2023 Edition"



Soil Volumes

- ▶ The calculator also used soil volume measurements to ensure
 - ▶ That the right tree will be provided in the right place (design tool)
 - ▶ Adequate soil volumes present for trees at maturity
 - ▶ Allows for a more accurate prediction of growth rate
- ▶ After consultation this was regarded as too onerous for private sector and was reluctantly removed

Implementation of the Canopy Calculator

- ▶ Prior to going live with the requirement on major planning applications, we held a number of sessions with the private sector hosted by Cornwall Council to demonstrate and discuss the calculator.
- ▶ This was extremely useful for summitting agents and allowed for a good working relationship between Local Authority and Private Sector

- ▶ **Policy has been in effect for 3 years now**
- ▶ We have had a number of submissions of varying quality
 - ▶ Probably as the private sector get used to using it
- ▶ **Common issues:**
 - ▶ Not all required documents are submitted (future canopy plans for example)
 - ▶ Linear or group features have reduced canopy value due to canopy overlap so not being specified
 - ▶ Inaccurate redline boundaries which has the effect of increasing existing/retained canopy on site
 - ▶ Species are being selected for there 25-year growth potential to make it easier to achieve targets
 - ▶ Canopy over hangs not being deducted
 - ▶ Private amenity space trees being counted towards score

Common issues

Can I just remove existing trees and replace with new planting, as long as I provide at least 15% canopy cover?

- ▶ No.
- ▶ Presumption to retain better quality canopy
- ▶ Mitigation hierarchy applied when considering tree removals.

My existing site has 22% canopy. I can just remove to 15%?

- ▶ Not licence to remove down to 15%.
- ▶ Must demonstrate why the removal of any tree above the 15% is necessary in accordance with the mitigation hierarchy.

Cont.

Can canopy provision be delivered off-site, like BNG?

- ▶ No.
- ▶ Canopy provision is to be on site so that the benefits can be realised within the development. 15% is an achievable minimum level of provision that sits well with other site requirements.

Is there a requirement to provide at least 15% canopy upon minor development sites?

- ▶ No, not a strict requirement.
- ▶ However, there is an expectation that applicants shall demonstrate consideration of canopy (as per Policy G3 and BS 5837:2012)

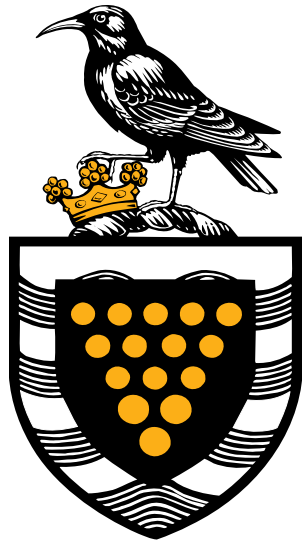
Cont.

If a developer owns land adjacent to an application site (i.e., it is within their control), can canopy be provided in this land and count toward an applications canopy calculations and canopy provision. ?

- ▶ No.
- ▶ The minimum 15% canopy must be provided on site, to provide ecosystem services and benefits to application site users/residents
- ▶ If the redline boundary exceeds area outside of the applicant's influence/control, or is planned for future applications then only the area within the direct applications site is to be counted

Questions?

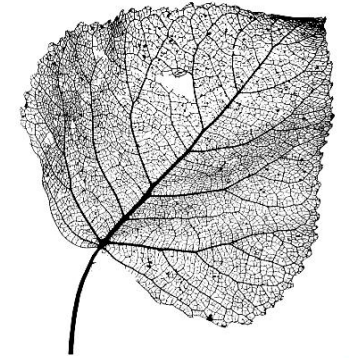
james.gregory@cornwall.gov.uk



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COUNCIL

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Sharon Hosegood
ASSOCIATES

Urban Tree Canopy and Local Development Planning Webinar 17 September 2026

Evolving use of canopy cover assessments in Major developments

Sharon Durdant-Hollamby FICFor FARborA BSc Hons Tech Cert ArborA

Planning Skills: Canopy targets and local development plans

What is canopy?

- 2-dimensional measurement
- Expressed as a % of site area for Major developments
- Overlapping canopies are measured, rather than individuals



First Steps in Canopy Cover Assessments

**For All Working in the Built Environment
at a Development Site Level**

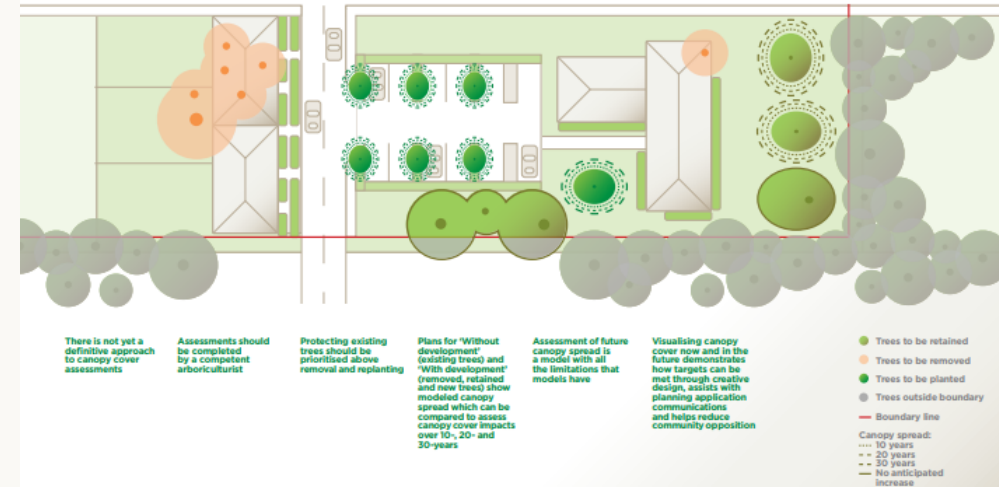
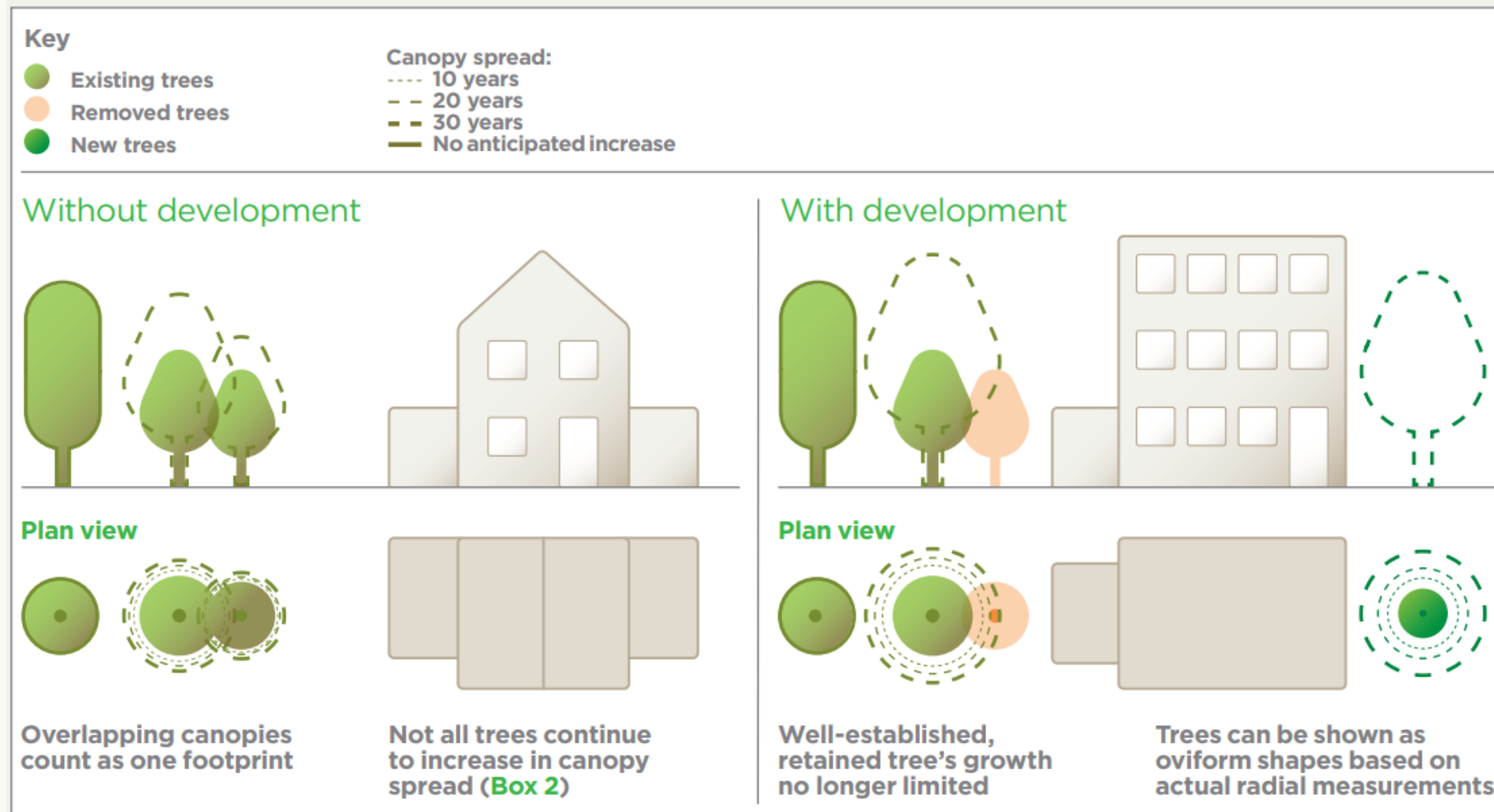


Fig. 1 **Comparison of canopy cover ‘Without development’ and ‘With development’**

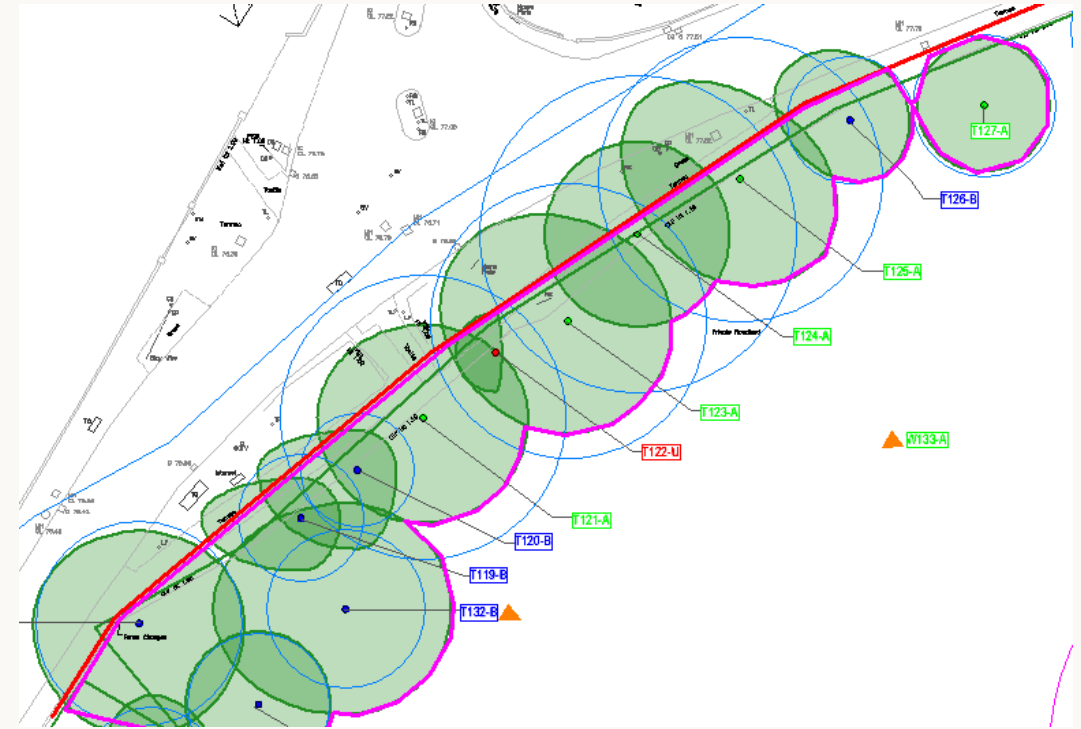
The below demonstrates canopy cover impacts over 10-, 20- and 30-years, and how an initial loss from development can recover and become a net gain in 30 years’ time. Projected growth and timescales should not be viewed as definitive.



What is the current tree population?

- Undertake a BS 5837 tree survey which will measure canopy spread and retention category.
- Overlapping canopies are measured, rather than individuals
- Expressed as a % of site area for Major developments
- The Arboricultural Consultant should work with the design team to maximise appropriate tree retention at RIBA Stages 0 to 3

The first step is to retain appropriately

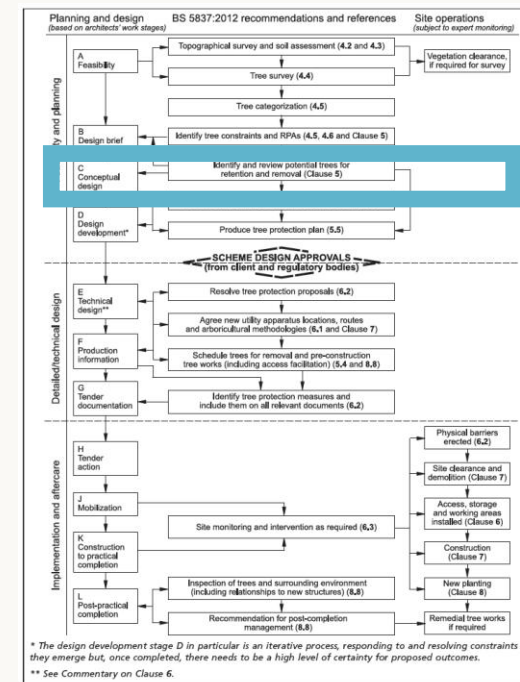


Tree Number	Botanical Name (Common name)	Age	Dia (mm)	Stems	Height (crown height)	Ult ht (m)	N	E	S	W	Cond	Life Exp	BS Cat
T127	Taxus baccata (Yew)	M	450	1	12(1.5)	18	5	5	5	5	Good	40+	A1
T128	Fraxinus excelsior (Ash)	EM	450	1	14(5)	22	8	5	4	8	Good	40+	B2

Maximising existing tree canopy

- Aim to retain existing trees within the public realm where possible
- Suitable distance between the canopy (current and projected) to the proposed buildings
- Retain trees near people and infrastructure which have a safe useful life expectancy
- Consider the emerging Scottish Planning Biodiversity Metric
- The Planning Authority Arboricultural Officer and the Arboricultural Consultant must have input in the emerging design of Major development

Close collaboration with allied professionals



Stage 2: Concept Design and Pre-application discussion

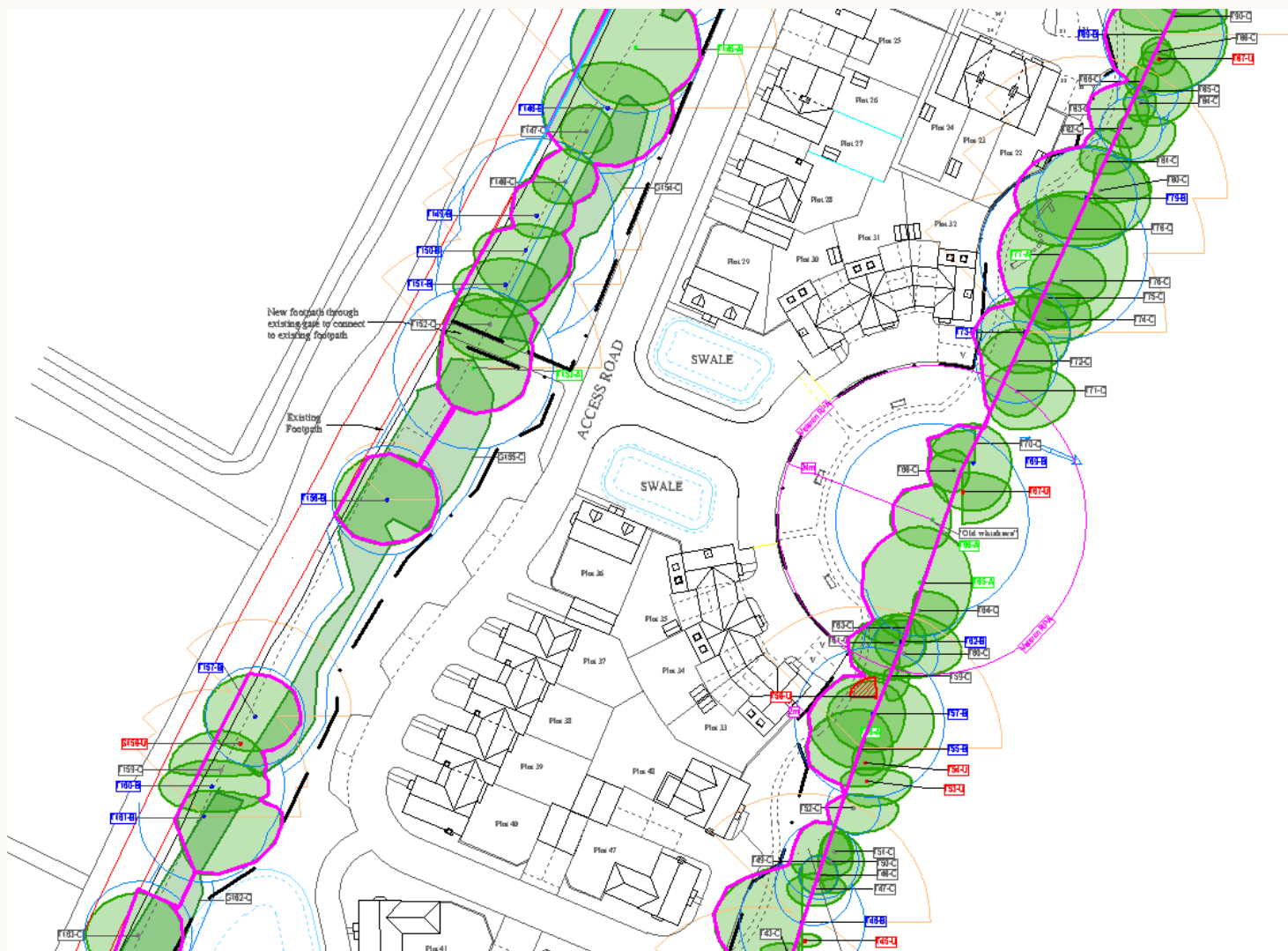
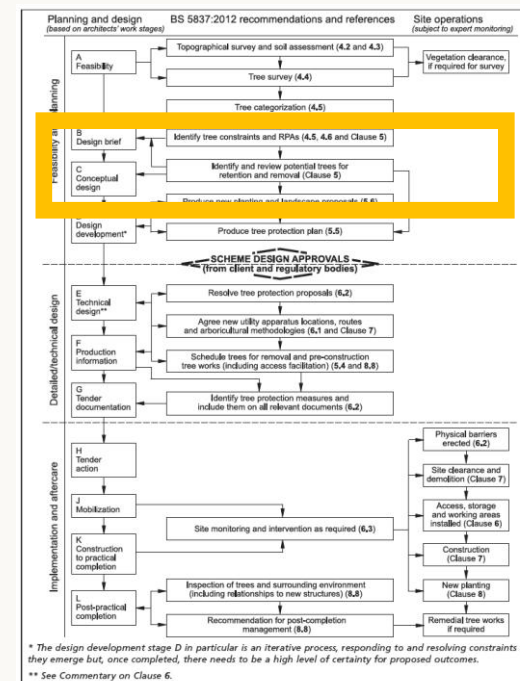
Powerful Planning Policies

- The Scottish Government target is 23% urban canopy cover
- National Planning Framework 4 (NPF4), Policy 6, supports the retention, management and enhancement of trees and woodland
- Planning authority policies are very helpful e.g. City of Edinburgh have targets to increase the current 17% canopy cover with three% bands dependent on situation and sets out a methodology.

Policies enable consultants to secure establishment on Major applications



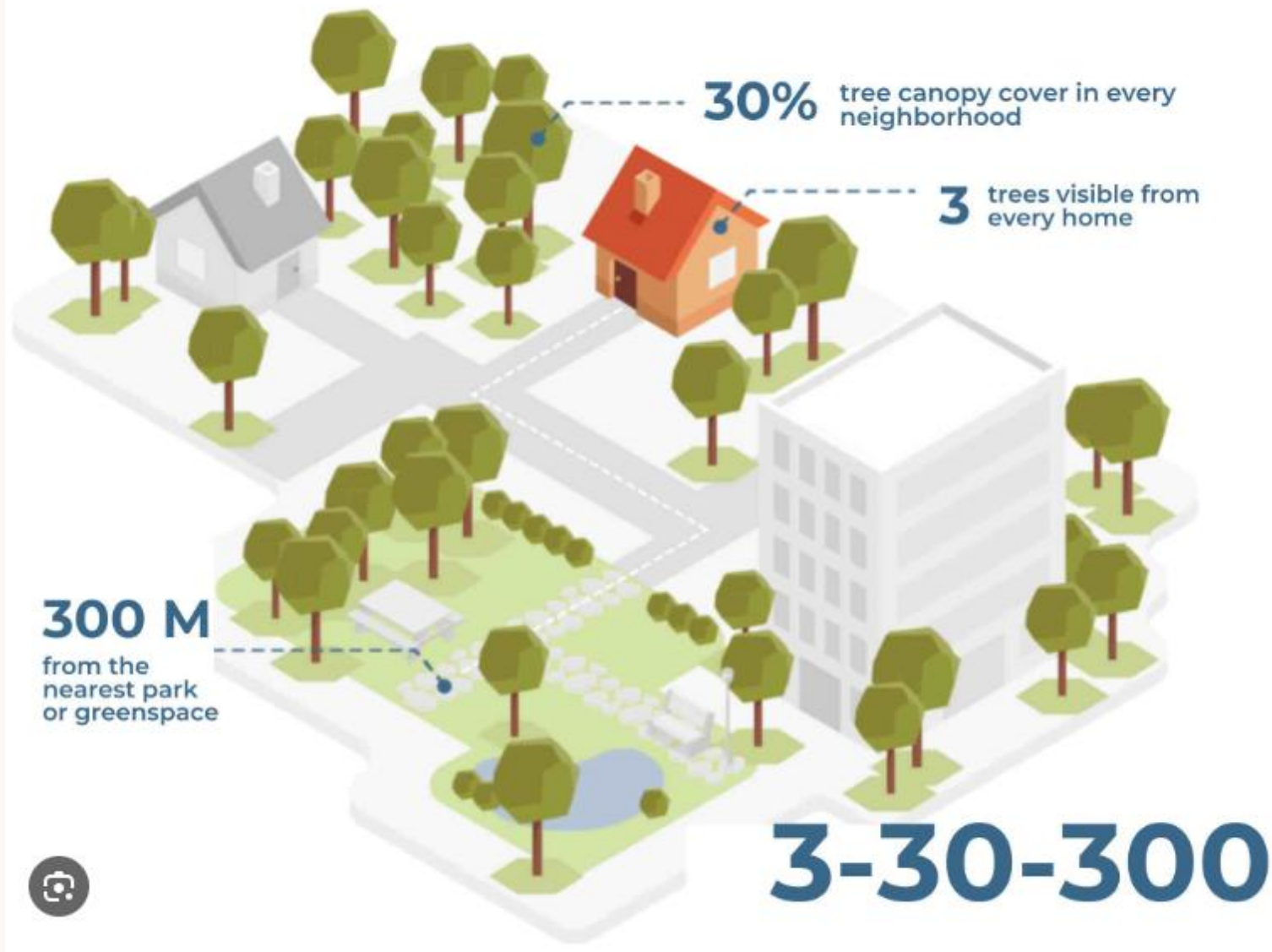
<https://philharmonia.co.uk/whats-on/bbc-proms-elgar-chopin-and-strauss/>



Stage 3: Spatial coordination and planning applications



Anche al Milionario si parla di alberi con la regola del 3-30-300 !! 🌳

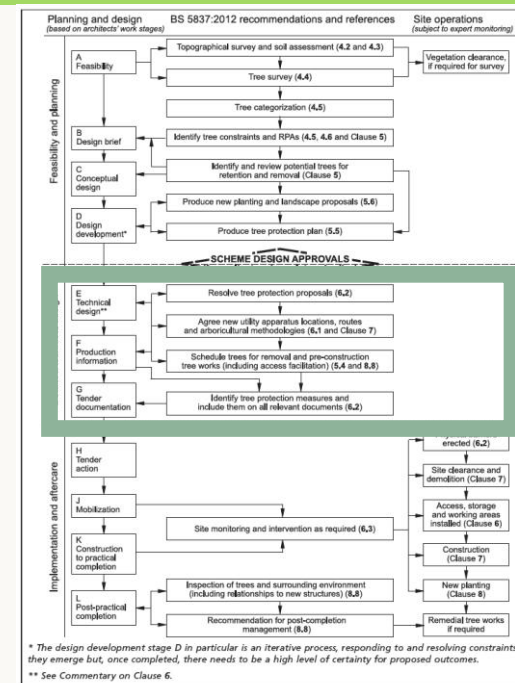


Strong planning policies
and conditions are a key
driver for the success of
tree retention and tree
establishment

Impact of proposed major development on canopy

- Calculate retained canopy cover and express as a percentage and square metres
- Calculate removed canopy cover and express as a percentage and square metres
- Calculate the proposed tree canopy at establishment (Year 0) and express it as a percentage and in square metres
- Calculate growth of new planting in Years 10, 20 and 30 (or relevant target)

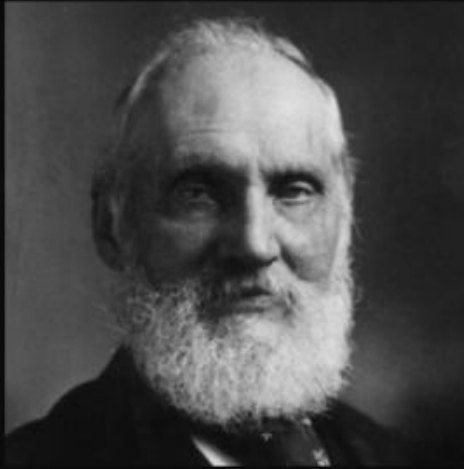
When do new established trees provide the same canopy as removed trees?



Stage 4: Technical Design and planning condition discharge



Lord Kelvin



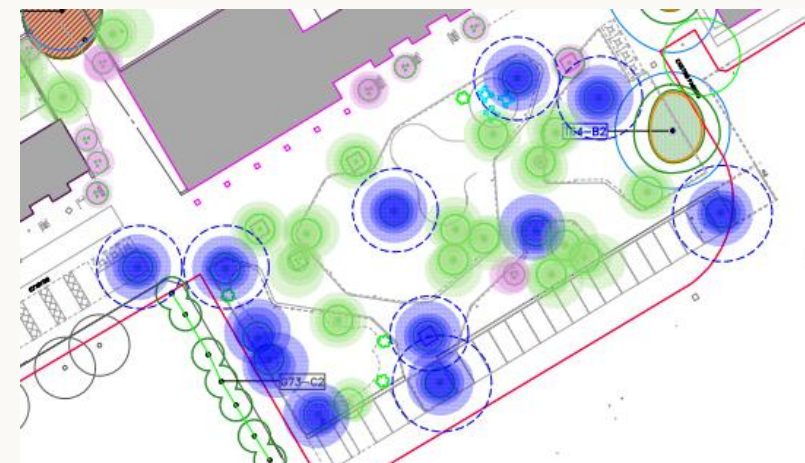
I often say that when you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind.

AZ QUOTES

Predicting growth of established trees

- Separate the proposed planting into 3 groups: small, medium and large. Note fastigate trees count as small trees.
- Use experience or a metric to estimate growth in Years 10, 20 and 30
- Calculate the total canopy cover for each size group
- Calculate the total canopy cover for new planting by adding up the size groups
- Calculate the year equivalence of when new established canopy = lost canopy

Multiple caveats



Vaz Monteiro, M., Levanič, T., Doick, K.J., 2017. Growth rates of common urban trees in five cities in Great Britain: A dendrochronological evaluation with an emphasis on the impact of climate. *Urban Forestry and Urban Greening* 22 (2017) 11-23.

White, J., 1998. Estimating the Age of Large and Veteran Trees in Britain. Forestry Commission Information Note

$1.4 \times \text{stem diameter to the power of } 0.45 = \text{crown diameter.}$

Extra Heavy Standard at 14-16cm girth or m/s growing at 0.98cm per year – 10 years = 9.8cm

All measurements in square metres – large canopy adjustment (based on experience)

Year	Stem Diameter (cm)	Canopy diameter	Canopy area	Total - 50
Year 1	4.8	2.84	6.34	317
10	14.6	4.68	17.2	860
20	24.4	5.89	27.25	1,362.50
30	34.2	6.86	36.96	1,848.00

Table 7 canopy calculations for large trees

Standard at 10-12cm girth or m/s growing at 0.98cm per year – 10 years = 9.8cm

All measurements in square metres – medium canopy

Year	Stem Diameter (cm)	Canopy diameter	Canopy area	Total - 50
Year 1	3.5	2.46	4.75	237.5
10	13.3	4.49	15.84	792
20	23.1	5.75	25.98	1,299.00
30	32.9	6.74	35.68	1,784.00

Standard at 10-12cm girth or m/s growing at 0.98cm per year – 10 years = 9.8cm

All measurements in square metres – small canopy adjustment (based on experience)

Year	Stem Diameter (cm)	Canopy diameter	Canopy area	Total - 50
Year 1	3.5	2.46	4.75	237.5
10	13.3	3.5	9.62	481
20	23.1	4.5	15.9	795
30	32.9	5	19.63	981.5

Total for all sizes and all new trees all in square metres

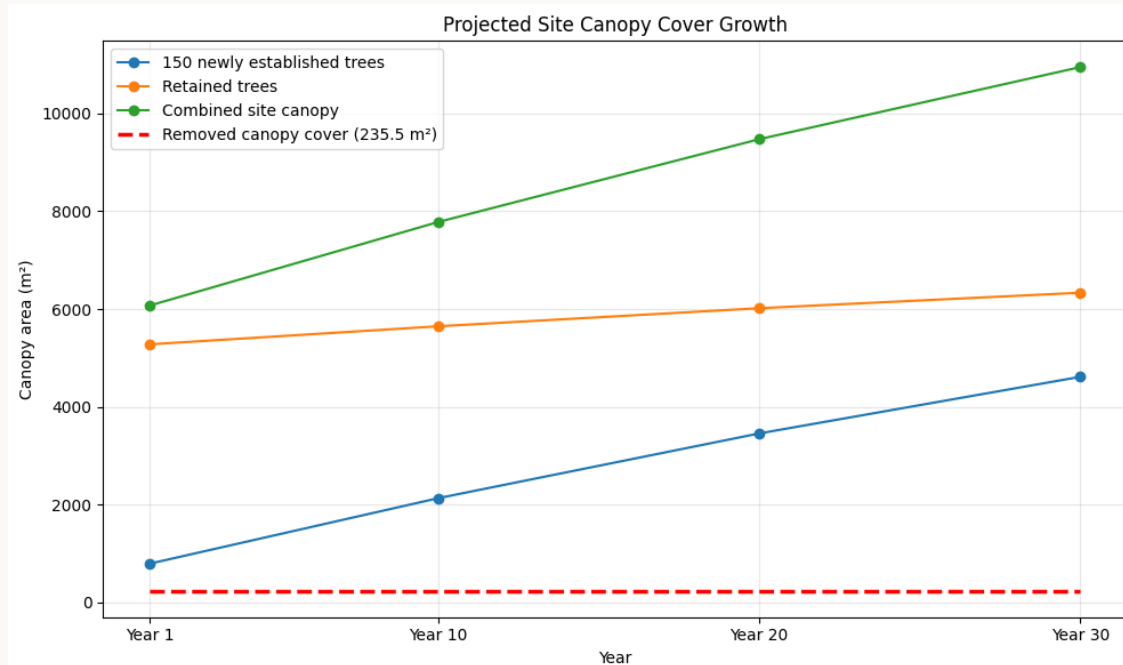
Year	Extra Heavy Standard 50	Standard 50 (medium)	Standard 50 (small)	Total 150
Year 1	317	237.5	237.5	792
10	860	792	481	2133
20	1,362.50	1,299.00	795	3,456.50
30	1,848.00	1,784.00	981.5	4,613.50

Table 8 canopy calculations total

Current canopy cover (refer to table 6)	New canopy cover in year of planting plus existing canopy cover	Result
17.94%	5,042.5 + 792 = 5,834.5 m	5,834.5 ÷ 28,100 × 100 = 20.76% canopy cover

Existing canopy in the red line boundary	5278 square metres
Canopy of 4 trees to be removed	235.5 square metres
Balance	5042.5 square metres
Percentage of total size of red line boundary (28,100 square metres, 2.81 ha)	17.94%

Table 6 – existing canopy cover within the red line boundary. Only live trees.



What could go wrong?

- Existing trees not adequately protected, managed or retained
- Poor quality nursery stock, planting, maintenance
- Vandalism
- Disease
- Unforeseen land use change or pressures
- Escalating climate change
- Wrong tree, wrong place

There are evolving models to calculate growth – exciting times!



Getting it right on site

- Existing trees – site monitoring is essential
- New trees – retention of landscape architect to oversee planting
- Observance of British Standards

BS 8545:2014 – Trees: from nursery to independence in the landscape.

BS 3998:2010 – Tree work – Recommendations. BS 3882:2015 – Topsoil.

BS 4428:1989 – General landscape operation



Stage 5:
Manufacturing and
construction –
compliance

Appropriate establishment

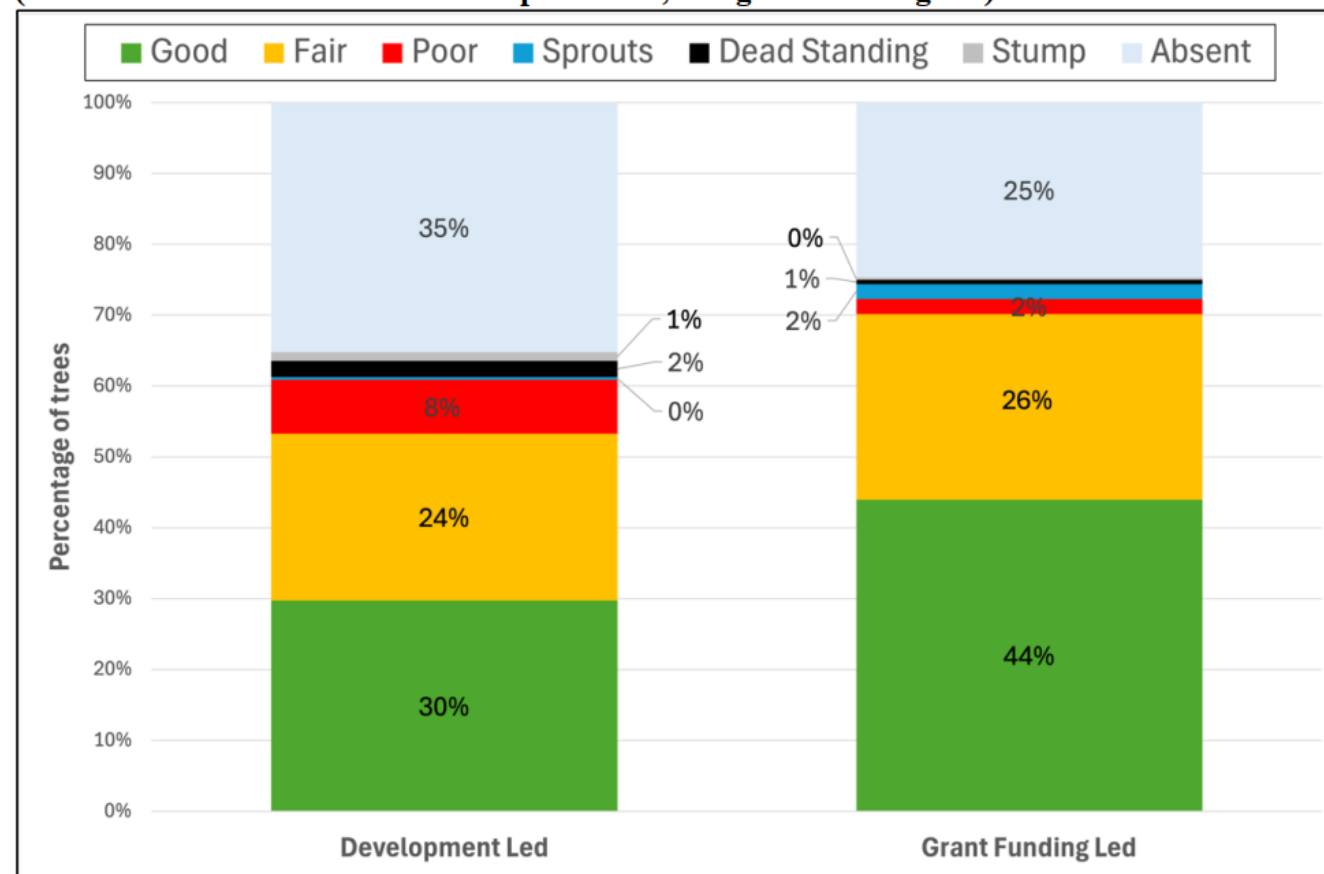
Evaluation of the Success of Urban Tree Planting in England between 2012 and 2022 Daisy Brasington BSc 2025 (Fund4Trees)

Looked at development-led urban tree planting:
Have the trees been planted? If so, are they alive and establishing successfully?

Brasington, D. (2025). Evaluation of the Success of Urban Tree Planting in England between 2012 and 2022. Fund4Trees, Oxford. pp 79.
Available from:
[<http://bit.ly/3I3ZrUp>]

Tree failure is a lost opportunity for beneficial change

Figure 2. Planted Tree Re-Inventory Protocol condition category split by funding source (total observation $n=820$: 488 development-led, 332 grant-funding-led)



Fund4Trees National Tree Establishment Campaign launch 2027



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<https://www.trees.org.uk/Help-and-Advice>

Trees in Hard Landscapes A Guide for Delivery



Tree Species Selection for Green Infrastructure

A Guide for Specifiers

Written by:
Dr Andrew Hirons and Dr Henrik Sjöman



Issue EN 1.4/2025



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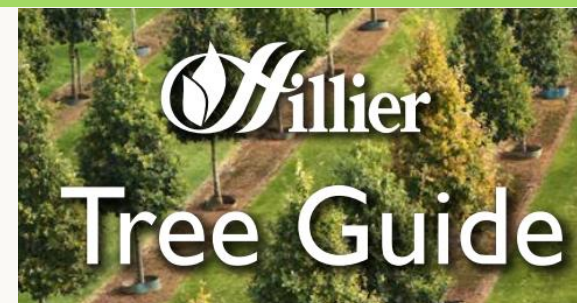


Guidance Sponsors



Street Trees

A GUIDE TO PLANTING
ESTABLISHMENT AND
AFTERCARE



Botanical name

Acer campestre

Field Maple

Size: Medium



This native tree is an important food source for many insects and birds. Its leaves are dark green turning to striking clear yellow in autumn. The bark is fissured with a slightly corky texture giving an additional element of interest. Its winged helicopter-like seeds are similar to most maples. Yellow-green upright clusters of flowers emerge in spring. It will happily embrace our coastal areas and is a lovely tree for natural or rural planting.

Common name

Ultimate size

Large over 20 m (60ft)
Medium 10 - 20 m (30 - 60ft)
Small 5 - 10 m (15 - 30ft)

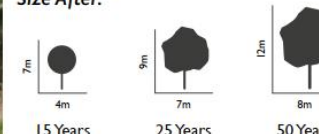
Description

Speciality:



Plant for a purpose

Size After:



Size & shape / form

Since the lifespan of a tree can be anything from 60 to 600 years, we have given an indication of approximate size (height x width), that is likely to be reached at 15 years, 25 years and 50 years from propagation. This information is an approximate average as trees will perform in accordance with site conditions and maintenance.

FORM: A guide to indicate the expected form or shape of the tree and how it develops, up to 50 years. These are average forms which again can vary with site conditions, for example strong prevailing winds.

Wet Soil Tolerance
Medium

Dry Soil Tolerance
Medium

Lime Tolerance
High

Soil tolerance

Soil conditions and tolerances (Wet soil / Dry soil / Lime tolerance).

Tolerances to various conditions once the tree is established.







What is the next chapter in the green story of this site, and what can it teach us?

- Canopy is a 2-dimensional concept, but our goal setting must be multi dimensional and consider quality, structure and sense of place.
- In the rush to secure canopy cover targets or headline metrics, we must secure the right tree in the right place
- Urban Tree Canopy targets must be locally set to reflect ecologically, physical, climatic and sociopolitical conditions. Start with what you have, see the areas of degradation and potential, speak to your community. Edinburgh does this well, with varying bands of canopy cover.
- Well maintained, adequately watered smaller trees can establish rapidly and, over time, may catch up with larger stock.
- *Monitoring. Learning. Sharing. Monitoring. Adjusting. Sharing. Monitoring.*

Tree failure not only erodes the landscape, soil and biodiversity, but community confidence.

Canopy cover metrics are only useful if they deliver a sustainable, established tree community.

Further reading

City of Edinburgh – Tree Canopy Cover Targets in Edinburgh Design Guidance based on their 17% current canopy cover (i-tree)

https://consultationhub.edinburgh.gov.uk/sfc/planning-edg/user_uploads/edinburgh-design-guidance--tree-canopy-cover-targets.pdf

https://www.tdag.org.uk/uploads/4/2/8/0/4280686/tdag_firststepscanopyassess.pdf

Morgenroth, J., Doick, K., Hauer, R., Locke, D.H., Ordóñez Barona, C., Roman, L.A., Conway, T.M., Dobbs, C., Duinker, P., Gulsrud, N.M., Jim, C.Y., Koeser, A.K., Landry, S., Livesley, S., Nesbitt, L., Shackleton, C.M., Tan, P.Y. and Yang, J. (2025) *Urban tree cover targets: The good, the bad and the SMART*. **Urban Forestry & Urban Greening**, 112, 128979. <https://doi.org/10.1016/j.ufug.2025.128979>

Sales, K., Walker, H., Sparrow, K., Handley, P., Vaz Monteiro, M., Hand, K.L., Buckland, A., Chambers-Ostler, A. and Doick, K.J. (2023) *The canopy cover Webmap of the United Kingdom's towns and cities*. **Arboricultural Journal**. <https://doi.org/10.1080/03071375.2023.2233864>

Brasington, D. (2025) *Evaluation of the Success of Urban Tree Planting in England between 2012 and 2022*. Prepared for Fund4Trees, Registered Charity 1152318, 3 June 2025.

Putting more trees where they are needed most



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Trees deliver most benefit when they are in the heart of our communities close to where we live and work.

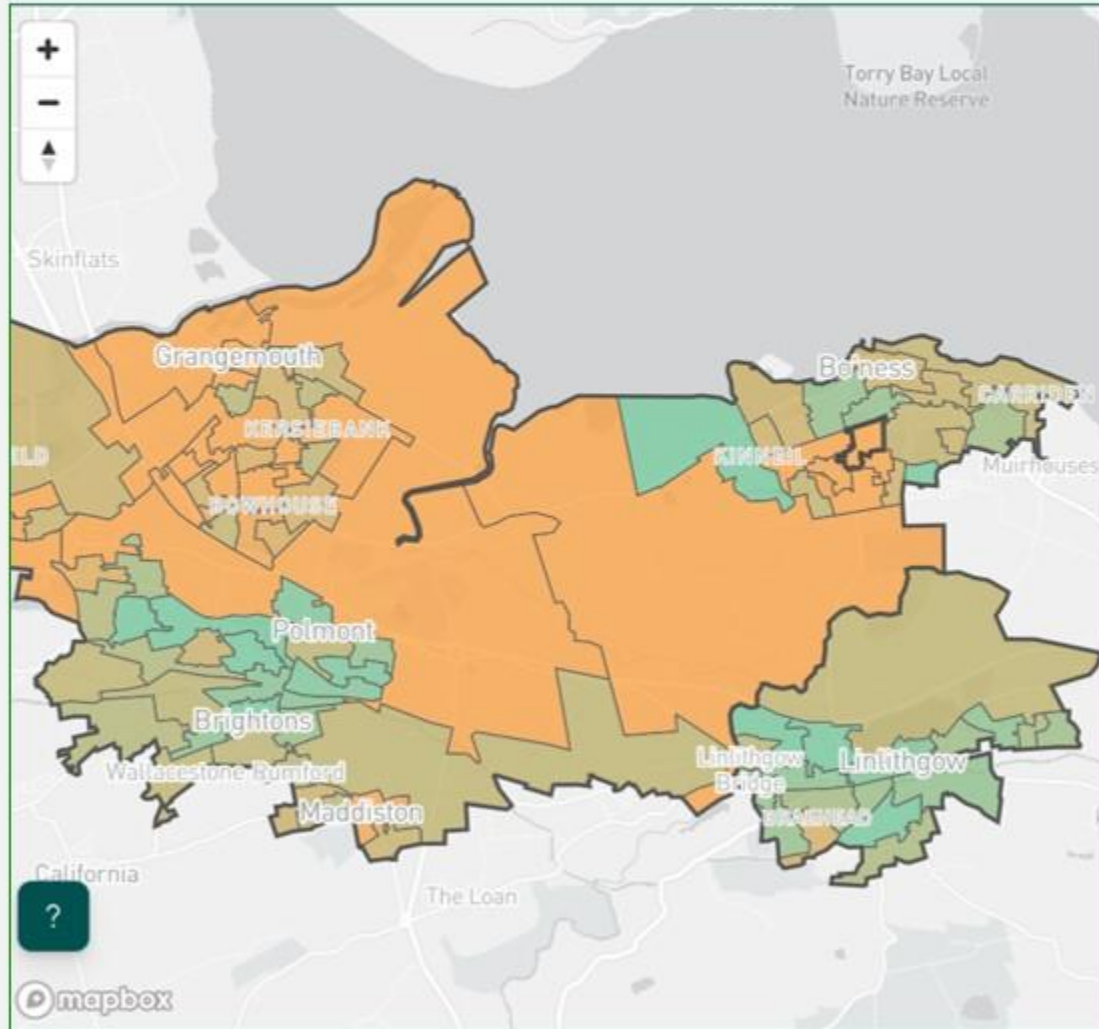
Many communities are missing out.



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**TREE EQUITY
SCORE UK**



**How do we
increase canopy
cover where it is
needed most,
creating healthier,
fairer, more
resilient places?**



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**Effective
protection of
existing urban
trees and woods.**



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Target a proportion of compensatory or replacement planting where it will deliver most benefit.



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**Target planting to
achieve net zero
or biodiversity
enhancement where
it will deliver most
socio-economic &
environmental
benefit.**



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**Set settlement
canopy targets**

**Identify priority
neighbourhoods
for canopy
expansion in
settlement plans.**



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**Embed urban
canopy goals
into nature
networks and
prioritise
delivery where
it will benefit
people and
nature**



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Require, wherever possible, the establishment of new street trees as part of road and infrastructure projects.



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Do you have other suggestions?

What would help you to put more trees where they are needed most?



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Questions



Thank you for attending

We will forward on links to:

- A PDF of the slides
- A recording of today's presentations
- Links to all of the documents mentioned today



Thanks to our presenters from



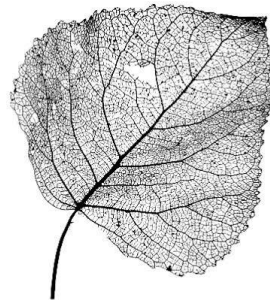
Scottish
Forestry
Coilltearachd
na h-Alba

Forth
Climate
Forest 

Midlothian 



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