

**CORNWALL**  
**COUNCIL**  
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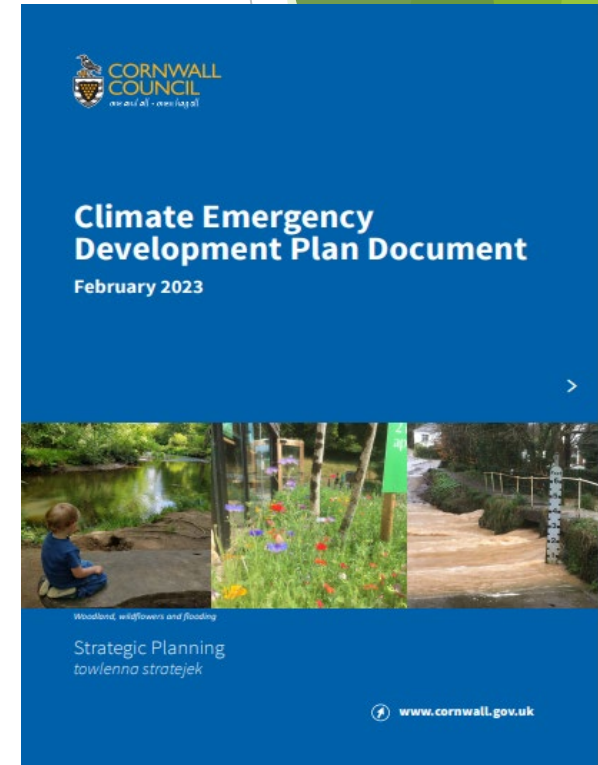
# Canopy Calculator

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Tree Officer  
Cornwall Council

# Cornwall Council Canopy Calculator forms part of the Cornwall Council Climate Emergency DPD (Development Plan Document) – Policy G3

- Cornwall Council declared a Climate and Ecological emergency 22<sup>nd</sup> January 2019
- DPD is the response of planning to it
- The DPD was adopted in February 2023.
- There are a range of policies from Coastal Management / Sustainable Construction & Town Centres ...
- Canopy Policy forms part of the Natural Climate Solutions section which consists of:
  - Green Infrastructure
  - Biodiversity Net Gain
  - Canopy &
  - Local Nature Recovery

The canopy policy became a validation requirement on **June 15<sup>th</sup> 2023**



# 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
- 
- ▶ 1: Prioritises retention of existing canopy
  - ▶ 2: Provides minimum levels of canopy provision
  - ▶ 3: Helps to build in climate resilience when considering species choice

## ***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 Urban Forestry and Woodland Advisory Committee
- ▶ Existing Cornish Parish average Canopy coverage is **10%**
- ▶ Achievable minimum figure
- ▶ Drives up delivery on low performing sites



## What is considered 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.

Paragraph 1

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



Paragraph 2

***Where existing site canopy is 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.”



Paragraph 3

## ***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 (is disproportionate to canopy)
    - provision of a 10% net gain onsite
    - priority and protected habitats, rare and/or protected species

Paragraph 4

## ***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.”

Paragraph 5

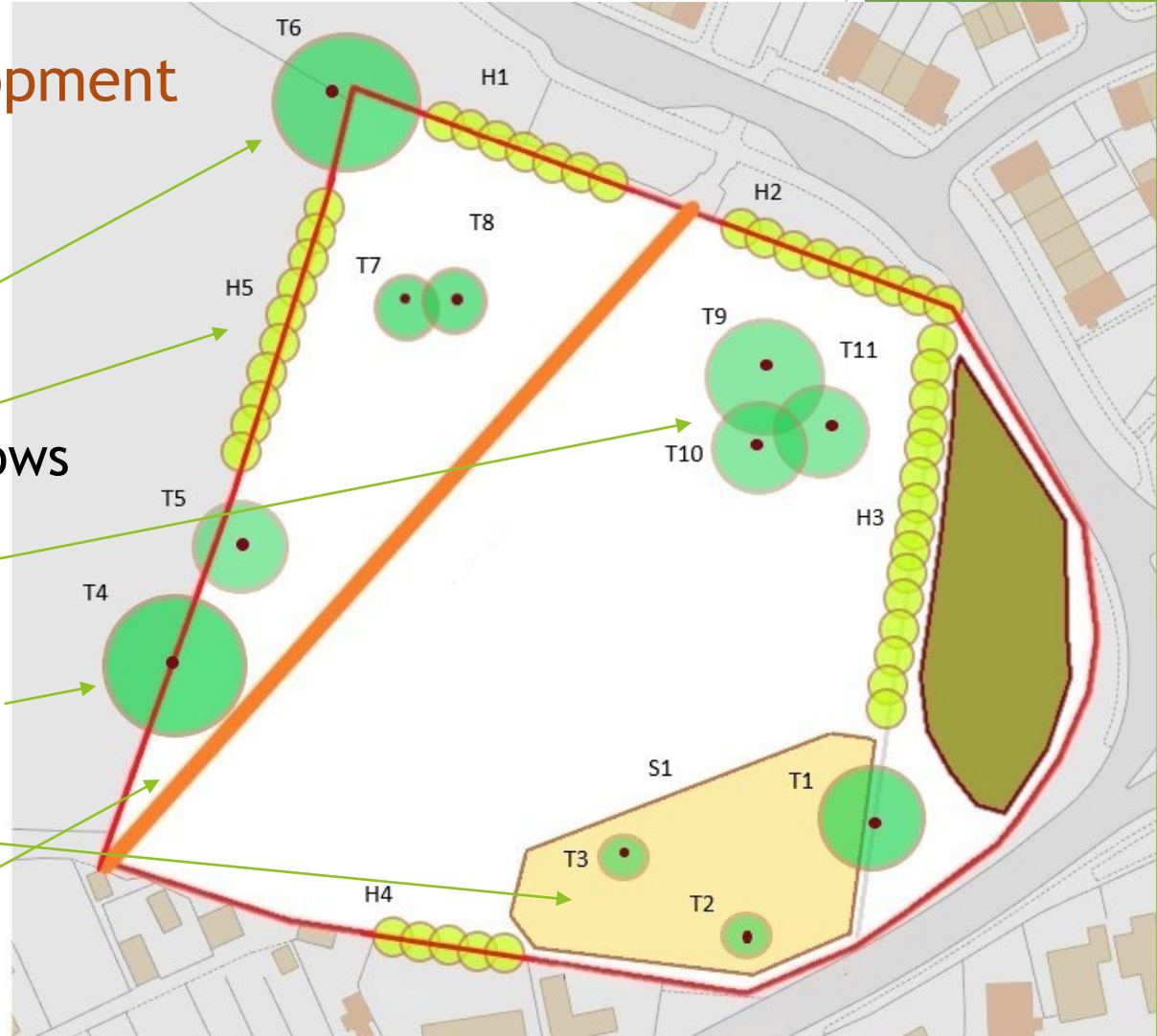
## *New Canopy*

“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 climate resilience of the site in a manner which protects and enhances existing canopy.”

## Example Pre-development Site:

- Trees offsite
- Boundary hedgerows
- Trees onsite
- Tree on boundary
- Scrub Habitat
- Gas line



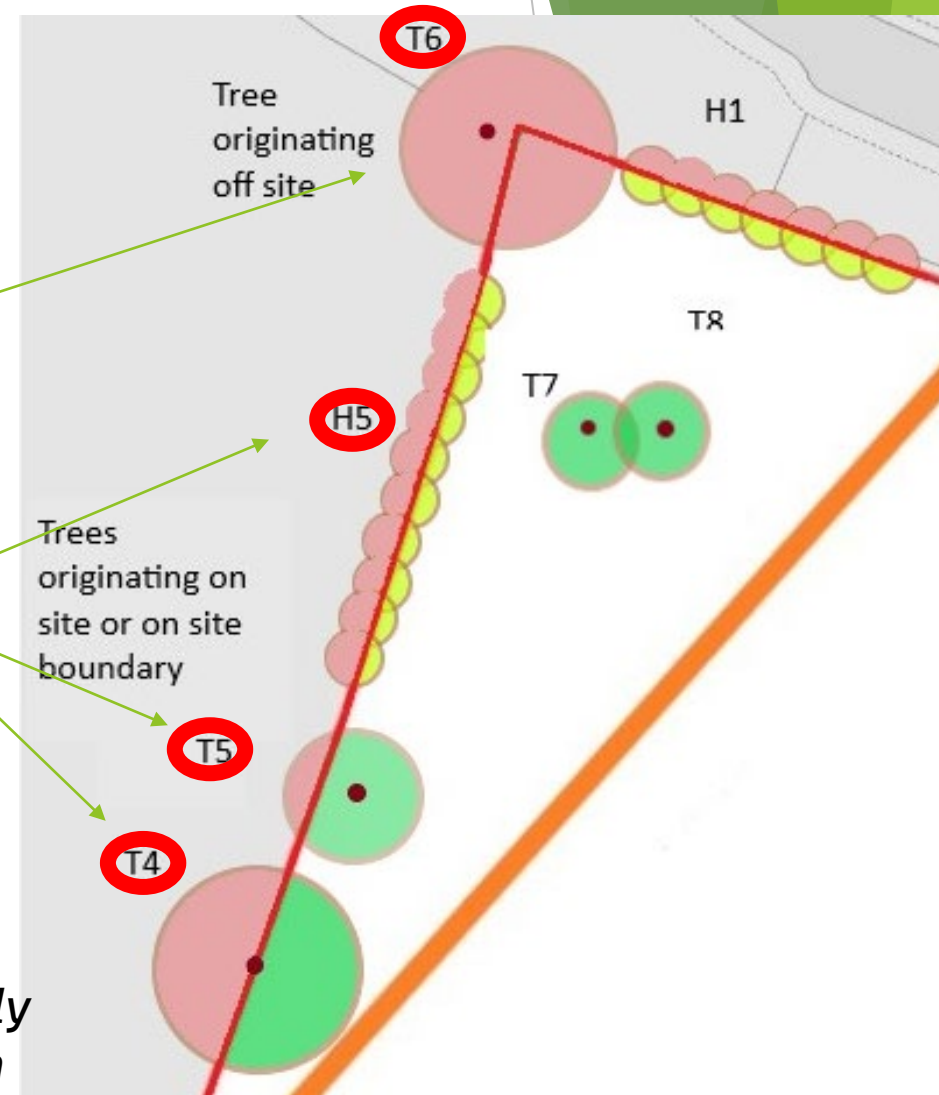
Only canopy that is retained or established  
***within the application site***

(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
- **Overhang outside site will need to be deducted**
- *If the redline boundary exceeds area outside of the applicant's influence/control or if the area is for proposed future development, then only the area within the current application influence is to be counted*





## Example Post Development Site: Typical Canopy Plan

- Retained Boundary hedgerows (with deductions)
- Retained Boundary Tree (with deductions)
- Retained Internal Hedgerows
- New internal hedgerows
- New Tree Groups
- New scrub Habitat
- New Garden Trees
- New Street Trees
- Retained trees (with pruning)





## 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
- ▶ Measures tree groupings
- ▶ Calculates canopy spread at year 25 (to be shown on a projected canopy plan)

# A quick view of the spreadsheet

## Site Summary

Cornwall Canopy Calculator			
1. Site Summary <i>Version 1.5</i>			
Site Name/ Address:	Site, Development Road, New Town, Cornwall		Applicant: Mr A. P. Plicant
Date:	01/04/2020		Assessor: Sir Veyor
	Area m <sup>2</sup>	% of net site area	Comments
Application site area:	15588		2 x agricultural fields
Retained priority habitat excluded from site area:	1153		Priority habitat for exclusion: Lowland meadow (g3a5)
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:	1,303	9.7%	
Canopy provision total:	2,455	18.4%	
Canopy provision balance:	133	1.0%	
<b>KEY</b>			
Enter value			
Drop-down menu			
Calculation			
Automatic lookup			
Result			

# Retained canopy

**Cornwall Canopy Calculator**  
**2. Retained Canopy Calculator**

Site Name/ Address: Site, Development Road, New Town, Cornwall  
 Applicant: Mr A. P. Plicant  
 Assessor: Sir Veyor  
 Date: 01/04/2020

**KEY**  
 Enter value  
 Drop-down menu  
 Calculation  
 Automatic lookup  
**Result**

Running Totals:  
 Retained Canopy: 8.6%  
 New Canopy: 3.7%  
 Total: 12.4%

Canopy m<sup>2</sup> Summary:  
 Pre: 2322.2  
 Removed: 1095.0  
 Retained: 1152.2

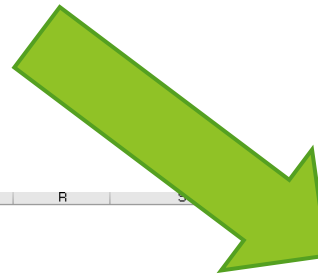
Canopy type	Ref. No. (e.g. T1, G2, S3, H4 or W5)	Tree species (or group description)	Canopy Measurements at the 4 cardinal points (for individual)				Canopy area (m <sup>2</sup> ) (from N,E,S,W)	Alternatively enter Canopy area (m <sup>2</sup> ) (e.g. from CAD)	Root Protection Area (RPA)	Canopy outside site (m <sup>2</sup> )	Canopy overlap to subtract (m <sup>2</sup> )	Planned canopy reduction (m <sup>2</sup> )	% RPA Encroachment due to development	Retain or Remove Canopy	Canopy prior to deductions (m <sup>2</sup> )	Canopy after deductions (m <sup>2</sup> )	Give relevant information about the trees, groups and canopy types (including UK hab codes where relevant). Including rationale for
			North	East	South	West											
Tree	T1	Quercus petraea					120.0	120						Retain	120.0	120.0	Overlaps S1
Tree	T2	Quercus petraea					17.5	17.5						Retain	17.5	17.5	Overlaps S1
Tree	T3	Quercus petraea					16.5	16.5						Retain	16.5	16.5	Overlaps S1
Tree	T4	Acer pseudoplatanus					290.0	290		145				Retain	145.0	145.0	Atop CH. 50% canopy overhanging adjacent
Tree	T5	Alnus glutinosa					85.0	85		3.5				Remove	75.5	75.5	15% canopy overhanging adjacent property
Tree	T7	Thuja occidentalis					39.0	39			1.4			Retain	37.6	37.6	Overlaps T8
Tree	T8	Thuja occidentalis					36.5	36.5			1.4			Retain	35.1	35.1	Overlaps T7
Tree	T9	Quercus ilex					158.0	158			3.5	15.8		Retain	148.5	132.7	Overlaps T10 & T11. Pruning to shorten defoliation
Tree	T10	Pinus sylvestris					75.5	75.5			10.5			Remove	65.0	65.0	Overlaps T13 & T11. Declining. Short sale value
Tree	T11	Pinus sylvestris					60.5	60.5			8		8%	Retain	52.5	49.3	Overlaps T3 & T10. RPA encroachment prior to
Scrub	S1	Blackthorn scrub					1025.0	1025			88			Remove	337.0	337.0	Overlapped by T1, 2 & 3. Dense blackthorn
Hedgerow	H1	Native mix					120.0	120		60				Retain	60.0	60.0	Hedgerow priority habitat. Mature. H2a. 50%
Hedgerow	H2	Native mix					180.0	180		90				Retain	90.0	90.0	Hedgerow priority habitat. Mature. H2a. 50%
Hedgerow	H3	Native mix					350.0	350				55		Retain	350.0	295.0	Hedgerow priority habitat. H2a. Mature. En
Hedgerow	H4	Native mix					105.0	105		49				Retain	56.0	56.0	Hedgerow priority habitat. Mature. H2a. 50%
Hedgerow	H5	Native mix					243.0	243		127				Retain	116.0	116.0	Hedgerow priority habitat. Mature. H2a. 50%
							0.0							Retain	0.0	0.0	
							0.0							Retain	0.0	0.0	
							0.0							Retain	0.0	0.0	
							0.0							Retain	0.0	0.0	
							0.0							Retain	0.0	0.0	
							0.0							Retain	0.0	0.0	
							0.0							Retain	0.0	0.0	
							0.0							Retain	0.0	0.0	
							0.0							Retain	0.0	0.0	
							0.0							Retain	0.0	0.0	
							0.0							Retain	0.0	0.0	
							0.0							Retain	0.0	0.0	
							0.0							Retain	0.0	0.0	
							0.0							Retain	0.0	0.0	
							0.0							Retain	0.0	0.0	
							0.0							Retain	0.0	0.0	

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

# New Canopy

Cornwall Canopy Calculator										Soil Calculator				
3. New Canopy Calculator														
Application Number: Site, Development Road, New Town, Cornwall		Running Total %		18.4%		Retained Canopy		New Trees		KEY				
Site Name: Mr A. P. Plicant		8.6%		9.7%						Enter value				
Assessor: Sir Veyor										Drop-down menu				
Date: 01/04/2020										Calculation				
										Automatic lookup				
										Result				
Version 1.5										Total				
										Canopy m <sup>2</sup>				
										Soil m <sup>3</sup>				
										1302.7				
										443.9				
Projected New Canopy										Soil Requirements				
New Canopy Ref.	Tree Species (including subspecies and varieties) OR alternative canopy type (ZZ)	Projected canopy radius on plan (m)	Group Canopy Cover Area, pre reduction (m <sup>2</sup> )	Projected canopy overlap for individual trees (m <sup>2</sup> ) OR Projected open space within group (m <sup>2</sup> )	% reduction	Canopy Cover Value per tree, pre reduction (m <sup>2</sup> )	Canopy Cover Value (m <sup>2</sup> )	Soil Texture	Available Water Holding Capacity (AWHC)	Soil Volume (m <sup>3</sup> )	Shared Soil &/or part of SuDS chain	Required Soil Volume (m <sup>3</sup> )	Comments Include relevant details Also include planting plan	
NT1	Pinus sylvestris	2			0%	9.8	9.8	Clay Loam	0.18	3.8	No	3.8		
NT1	Pinus sylvestris	2			0%	9.8	9.8	Clay Loam	0.18	3.8	No	3.8		
NT3	Pinus sylvestris	2			0%	9.8	9.8	Clay Loam	0.18	3.8	No	3.8		
NH(CH) 1	ZZ Native Hedge (atop CH)	N/A	153.0		0%	N/A	153.0	Clay Loam	0.18	0.0	Yes	0.0	51m of CH w	
NT4	Tilia tomentosa	2			0%	20.4	20.4	Clay Loam	0.18	7.9	No	7.9		
NT5	Acer pseudoplatanus subsp. Spaet	3			0%	29.5	29.5	Clay Loam	0.18	11.5	No	11.5		
NT6	Acer pseudoplatanus subsp. Spaet	3			0%	29.5	29.5	Clay Loam	0.18	11.5	No	11.5		
NT7	Acer pseudoplatanus subsp. Spaet	3			0%	29.5	29.5	Clay Loam	0.18	11.5	No	11.5		
NT8	Crataegus monogyna	1			0%	10.6	10.6	Clay Loam	0.18	4.1	No	4.1		
NT9	Crataegus monogyna	1			0%	10.6	10.6	Clay Loam	0.18	4.1	No	4.1		
NT10	Crataegus monogyna	1			0%	10.6	10.6	Clay Loam	0.18	4.1	No	4.1		
NS1	ZZ Scrub	N/A	125.0		0%	N/A	125.0	Clay Loam	0.18	51.7	No	51.7	125m <sup>2</sup> Hazel	
NG1	ZZ Group	N/A	58.0		0%	N/A	58.0	Clay Loam	0.18	24.0	No	24.0	3 No. Alnus g	
NG2	ZZ Group	N/A	71.1		0%	N/A	71.1	Clay Loam	0.18	29.4	No	29.4	3 No. Prunus	
NT11	Malus tschonoskii	2			0%	10.7	10.7	Clay Loam	0.18	4.2	No	4.2		
NT12	Malus tschonoskii	2			0%	10.7	10.7	Clay Loam	0.18	4.2	No	4.2		
NT13	Malus tschonoskii	2			0%	10.7	10.7	Clay Loam	0.18	4.2	No	4.2		
NT14	Malus sylvestris	3			0%	15.3	15.3	Clay Loam	0.18	5.9	No	5.9		
NT15	Malus sylvestris	3			0%	15.3	15.3	Clay Loam	0.18	5.9	No	5.9		
NT16	Malus sylvestris	3			0%	15.3	15.3	Clay Loam	0.18	5.9	No	5.9		
NT17	Pyrus calleryana	3			0%	6.2	6.2	Clay Loam	0.18	2.4	No	2.4		
NT18	Pyrus calleryana	3			0%	6.2	6.2	Clay Loam	0.18	2.4	No	2.4		
NT19	Pyrus calleryana	3			0%	6.2	6.2	Clay Loam	0.18	2.4	No	2.4		
NT20	Pyrus calleryana	3			0%	6.2	6.2	Clay Loam	0.18	2.4	Yes	1.9		
NT21	Pyrus calleryana	3			0%	6.2	6.2	Clay Loam	0.18	2.4	No	2.4		
NT22	Quercus petraea	1			0%	36.6	36.6	Clay Loam	0.18	14.2	No	14.2		
NT23	Quercus petraea	1			0%	36.6	36.6	Clay Loam	0.18	14.2	No	14.2		
NT24	Quercus petraea	1			0%	36.6	36.6	Clay Loam	0.18	14.2	No	14.2		
NT25	Sorbus aria	2			0%	8.8	8.8	Clay Loam	0.18	3.4	No	3.4		
NT26	Sorbus aria	2			0%	8.8	8.8	Clay Loam	0.18	3.4	No	3.4		
NT27	Sorbus aria	2			0%	8.8	8.8	Clay Loam	0.18	3.4	No	3.4		
NT28	Sorbus aria	2			0%	8.8	8.8	Clay Loam	0.18	3.4	No	3.4		
NT29	Sorbus aria	2			0%	8.8	8.8	Clay Loam	0.18	3.4	No	3.4		

# Species List



tree species in design.  
 ide to TDAG for allowing adaption of the Tree Species

5. Species List  
 base.  
 © Trees and Design Action Group Trust  
[Infrastructure: A Guide for Specifiers, Trees and Design Action](#)

TDAG	Species name	Transport corridor	Environmental tolerance			Ornamental qualities			Cornish Trees		Canopy Values	
			Shade	Drought	Waterlogging	Peak flowerin	Peak fruitin	Leaf type	Distinctiveness	Suitability	Canopy Radius - For Plans	Canopy Cover Value
TDAG L&G	Abies concolor	No	Tolerant	Moderately tolerant	Sensitive	Early summer	Late summer	Evergreen conifer	3	3	3	1.8
TDAG L&G	Abies fraseri	No	Tolerant	Moderately sensitive	Moderately sensitive	Early summer	Early autumn	Evergreen conifer	3	2	2	1.8
TDAG L&G	Abies grandis	No	Tolerant	Moderately sensitive	Moderately sensitive	Early summer	Early autumn	Evergreen conifer	2	2	2	2.7
TDAG L&G	Abies koreana	No	Tolerant	Moderately sensitive	Moderately sensitive	Early summer	Late summer	Evergreen conifer	3	2	2	1.4
TDAG L&G	Abies nordmanniana	No	Tolerant	Moderately sensitive	Moderately sensitive	Early summer	Early autumn	Evergreen conifer	3	3	3	2.3
TDAG L&G	Abies procera	No	Partially tolerant	Moderately sensitive	Sensitive	Early summer	Late summer	Evergreen conifer	3	3	3	2.3
TDAG L&G	Acacia dealbata	No	Moderately tolerant	Moderately tolerant	Moderately tolerant	Early spring	Late summer	Evergreen broadleaved	2	1	1	1.8
TDAG L&G	Acer buergerianum	Yes	Moderately tolerant	Moderately tolerant	Moderately sensitive	Late spring	Late summer	Deciduous broadleaved	3	3	3	1.8
TDAG L&G	Acer campestre	Yes	Moderately tolerant	Moderately tolerant	Moderately tolerant	Late spring	Late summer	Deciduous broadleaved	3	2	2	3.2
TDAG G	Acer campestre subsp. Elstrijk	Yes	Moderately tolerant	Moderately tolerant	Moderately tolerant	Late spring	Late summer	Deciduous broadleaved	3	2	2	2.7
Neither	Acer campestre subsp. Streetwise	Yes	Moderately tolerant	Tolerant	Moderately tolerant	Late spring	Late summer	Deciduous broadleaved	3	2	2	1.4
Neither	Acer campestre subsp. William Cadzow	Yes	Moderately tolerant	Moderately tolerant	Moderately tolerant	Late spring	Late summer	Deciduous broadleaved	3	2	2	0.9
TDAG L&G	Acer capillipes	No	Partially tolerant	Moderately sensitive	Moderately sensitive	Late spring	Early autumn	Deciduous broadleaved	3	2	2	2.3
TDAG L&G	Acer cappadocicum	No	Partially tolerant	Moderately tolerant	Moderately tolerant	Late spring	Early autumn	Deciduous broadleaved	3	2	2	4.5
Neither	Acer cappadocicum subsp. Lobellii	No	Partially tolerant	Moderately tolerant	Moderately tolerant	Late spring	Early autumn	Deciduous broadleaved	3	2	2	1.8
TDAG L&G	Acer davidii	No	Moderately tolerant	Moderately sensitive	Moderately sensitive	Late spring	Early autumn	Deciduous broadleaved	3	2	2	2.7
TDAG L&G	Acer grisseum	No	Moderately tolerant	Moderately sensitive	Moderately sensitive	Late spring	Late summer	Deciduous broadleaved	3	2	2	1.4
TDAG L&G	Acer japonicum	No	Moderately tolerant	Moderately sensitive	Moderately sensitive	Late spring	Late summer	Deciduous broadleaved	3	2	2	2.3
TDAG L&G	Acer monspessulanum	No	Partially tolerant	Tolerant	Sensitive	Late spring	Late summer	Deciduous broadleaved	3	2	2	2.3
TDAG L&G	Acer negundo	No	Partially tolerant	Moderately tolerant	Moderately tolerant	Early spring	Late summer	Deciduous broadleaved	3	2	2	3.6
TDAG L&G	Acer palmatum	No	Tolerant	Moderately sensitive	Moderately sensitive	Late spring	Early autumn	Deciduous broadleaved	3	3	3	1.4
TDAG L&G	Acer platanoides	No	Tolerant	Moderately tolerant	Moderately sensitive	Late spring	Late summer	Deciduous broadleaved	2	1	1	2.7
TDAG G	Acer platanoides subsp. Columnare	No	Tolerant	Moderately tolerant	Moderately sensitive	Early spring	Late summer	Deciduous broadleaved	3	2	2	1.1
TDAG G	Acer platanoides subsp. Crimson King	No	Tolerant	Moderately tolerant	Moderately sensitive	Early spring	Late summer	Deciduous broadleaved	3	2	2	2.7
TDAG G	Acer platanoides subsp. Crimson Sentinel	No	Tolerant	Moderately tolerant	Moderately sensitive	Early spring	Late summer	Deciduous broadleaved	3	2	2	1.4
TDAG G	Acer platanoides subsp. Deborah	No	Tolerant	Tolerant	Moderately sensitive	Early spring	Late summer	Deciduous broadleaved	3	2	2	3.2
TDAG G	Acer platanoides subsp. Drummondii	No	Partially tolerant	Moderately tolerant	Moderately sensitive	Early spring	Late summer	Deciduous broadleaved	3	2	2	2.3
TDAG G	Acer platanoides subsp. Emerald Queen	No	Tolerant	Moderately tolerant	Moderately sensitive	Early spring	Late summer	Deciduous broadleaved	3	2	2	3.2
TDAG G	Acer platanoides subsp. Globosum	No	Tolerant	Moderately tolerant	Moderately sensitive	Early spring	Late summer	Deciduous broadleaved	3	2	2	1.4
Neither	Acer platanoides subsp. Dbelisk	No	Tolerant	Moderately tolerant	Moderately sensitive	Early spring	Late summer	Deciduous broadleaved	3	2	2	0.9
TDAG G	Acer platanoides subsp. Princeton Queen	No	Moderately tolerant	Moderately tolerant	Moderately sensitive	Early spring	Late summer	Deciduous broadleaved	2	2	2	1.4
TDAG L&G	Acer pseudoplatanus	No	Tolerant	Moderately sensitive	Moderately tolerant	Late spring	Late summer	Deciduous broadleaved	1	1	1	3.2
TDAG G	Acer pseudoplatanus subsp. Atropurpureum	No	Tolerant	Moderately sensitive	Moderately tolerant	Late spring	Late summer	Deciduous broadleaved	2	2	2	3.2
TDAG G	Acer pseudoplatanus subsp. Brilliant	No	Tolerant	Moderately sensitive	Moderately tolerant	Late spring	Late summer	Deciduous broadleaved	3	2	2	1.8
TDAG G	Acer pseudoplatanus subsp. Erectum	No	Tolerant	Moderately sensitive	Moderately tolerant	Late spring	Late summer	Deciduous broadleaved	3	1	1	2.3
TDAG G	Acer pseudoplatanus subsp. Spaetzi	No	Tolerant	Moderately sensitive	Moderately tolerant	Late spring	Late summer	Deciduous broadleaved	3	1	1	3.2
TDAG G	Acer pseudoplatanus subsp. Worleyi	No	Tolerant	Moderately sensitive	Moderately tolerant	Late spring	Late summer	Deciduous broadleaved	3	1	1	2.3
TDAG L&G	Acer rubrum	Yes	Moderately tolerant	Moderately sensitive	Moderately tolerant	Early spring	Early summer	Deciduous broadleaved	3	2	2	2.7
Neither	Acer rubrum subsp. Armstrong	Yes	Moderately tolerant	Moderately tolerant	Moderately tolerant	Early spring	Early summer	Deciduous broadleaved	3	2	2	1.8
TDAG L&G	Acer rupestris	No	Tolerant	Moderately sensitive	Moderately sensitive	Early spring	Early autumn	Deciduous broadleaved	3	2	2	1.8
TDAG L&G	Acer saccharinum	No	Moderately tolerant	Moderately tolerant	Moderately tolerant	Early spring	Early summer	Deciduous broadleaved	3	3	3	3.6
TDAG G	Acer saccharinum subsp. Laciniata	No	Moderately tolerant	Moderately tolerant	Moderately tolerant	Early spring	Early summer	Deciduous broadleaved	3	3	3	3.6
TDAG G	Acer saccharinum subsp. Pyramidata	No	Moderately tolerant	Moderately tolerant	Moderately tolerant	Early spring	Early summer	Deciduous broadleaved	3	3	3	2.3
TDAG L&G	Acer saccharum	No	Tolerant	Moderately tolerant	Sensitive	Late spring	Early autumn	Deciduous broadleaved	3	3	3	4.1
TDAG L&G	Acer shirasaw anum	No	Moderately tolerant	Moderately sensitive	Moderately sensitive	Late spring	Early autumn	Deciduous broadleaved	3	3	3	1.4
TDAG L&G	Acer sp.	Yes	Moderately tolerant	Moderately sensitive	Moderately sensitive	Early spring	Early summer	Deciduous broadleaved	2	2	2	1.8

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

## Tree Species Selection for Green Infrastructure

### A Guide for Specifiers

Written by:  
Dr Andrew Hirons and Dr Henrik Sjöman



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

Plant for a purpose

Speciality: **Native Tree**, **Wildlife**, **Pollinator**, **Urban**

Size After:

15 Years 25 Years 50 Years

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.

Since the lifespan of a tree can be anything from 60 to 600 years (Ultimate size), 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.

## What does it mean for planning process?

Explicit  
recognition at  
local policy level

Clear minimum  
expectation

Early  
consideration of  
canopy

Increased liaison

Additional  
submission  
documents

# What will it secure for residents & communities?

Greener sites

Shaded streets,  
improved air  
quality &  
reduced flooding

Improved mental  
well-being

Increased carbon  
sequestration

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  
canopy 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 consultants?

Earlier  
commissions

Clear  
expectation and  
guidance to  
respond to

A need to be  
mindful of  
ecology &  
survey data

Greater liaison  
between green  
sector  
consultants

Support in new  
planting

## What does it mean for tree officers?

Clear canopy provision requirement and supporting policy

Earlier consideration of trees and spatial conflicts

Two additional documents to review at consultation

Improved pre-commencement planning conditions

- ▶ Policy has been in effect for more than 18 months 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
  - ▶ Linear or group features which have reduced canopy value due to canopy overlap are not being specified
  - ▶ Redline boundaries are being ‘amended’ to increase existing/retained canopy on site
  - ▶ Species are being selected for their 25-year growth potential to make it easier to achieve targets, having a potential negative effect on ‘right tree, right place’
  - ▶ Canopy over hangs not being deducted

Questions?  
Please email:

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**CORNWALL**  
**COUNCIL**

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## FAQ's

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 applicants influence/control, or is planned for future applications then only the area within the direct applications site is to be counted



## Cont.

### 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.