

# Tree Canopy Guide for Low and Mid Rise Housing







# Acknowledgement of Country

The Department of Planning, Housing and Infrastructure acknowledges that it stands on Aboriginal land. We acknowledge the Traditional Custodians of the land, and we show our respect for Elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

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Tree Canopy Guide for Low and Mid Rise Housing

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## Acknowledgements

The urban tree canopy, deep soil and planting rates for dual occupancies, terraces and multi-dwelling housing in this document were derived from 'Urban Tree Canopy Targets and Development Controls Report' (2021) prepared for the former Department of Planning, Industry and Environment by Gallagher Studio and Studio Zano.

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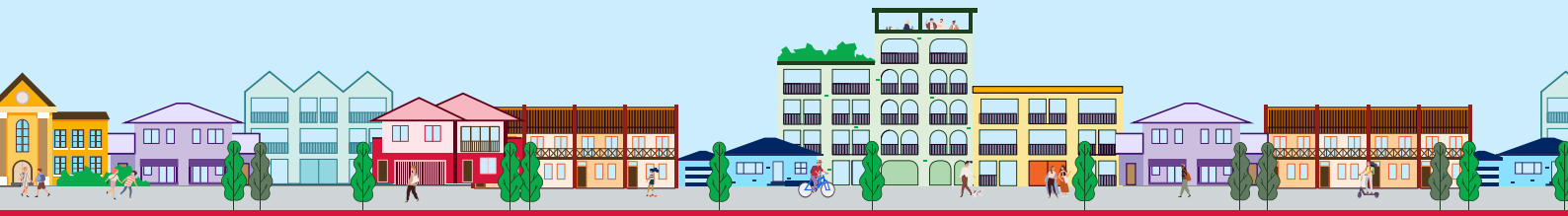
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# Improving local amenity and creating cooler places

The NSW Government is committed to increasing housing supply and the diversity of housing stock in existing urban centres in NSW.

Tree canopy helps to create thriving and sustainable communities. Trees mitigate the effects of urban heat build-up, improve local amenity, support mental and physical wellbeing and increase biodiversity.

This *Tree Canopy Guide for Low and Mid Rise Housing* supports the provision of urban tree canopy and deep soil across a diverse range of residential development types. The guide helps achieve high-quality greening outcomes through targets that consider the capacity of a site and are based on the size of the lot and the nature of the proposed development.

## Application of the guide

This guide helps councils and proponents to assess and deliver tree planting, canopy cover and deep soil on low and mid-rise developments. The guidance applies to the same land and housing typologies as outlined in Chapter 6 of the State Environmental Planning Policy (Housing) 2021.

**Table 1. Application of this guide**

Development type	Application
Dual occupancies	Low and Mid Rise Housing Areas in R1, R2, R3, R4 zones
Multi-dwelling housing (terraces)	Low and Mid Rise Housing Areas in R1, R2, R3, R4 zones
Multi-dwelling housing	Low and Mid Rise Housing Areas in R1, R2, R3, R4 zones
Residential flat buildings in R1 and R2 zones	Low and Mid Rise Housing Areas in R1, R2 zones
Residential flat buildings and shop-top housing in R3 and R4 zones	Low and Mid Rise Housing Areas in R3, R4 zones





# Urban tree canopy guidance

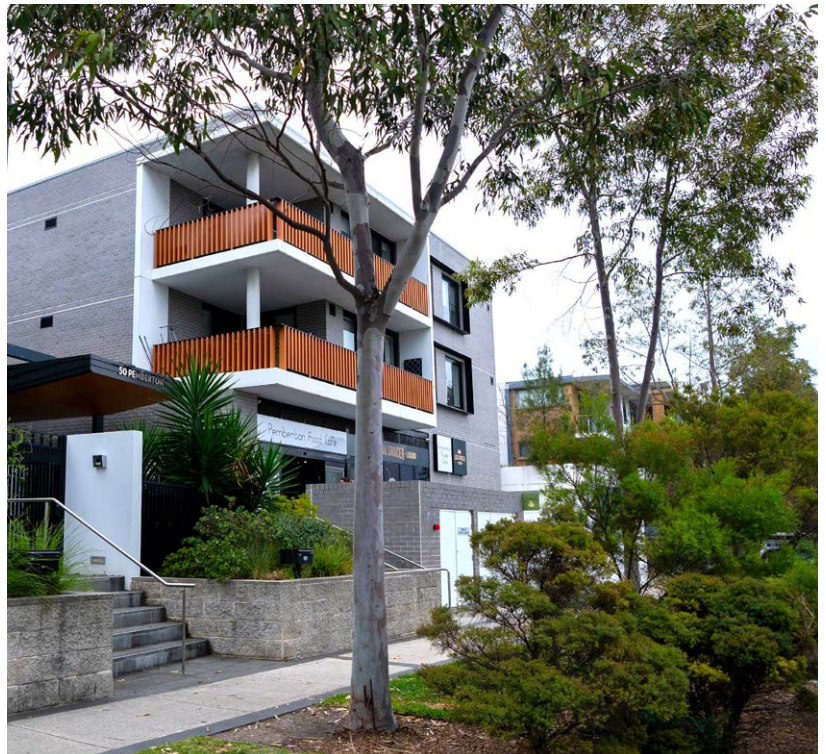
## Objectives

- Maintain and enhance canopy cover to mitigate urban heat, increase local amenity, reduce air pollution, support biodiversity and improve community health and wellbeing.
- Provide sufficient deep soil to support healthy root system development and ensure canopy trees reach maturity.

## Guidance for dual occupancies, multi-dwelling (terraces), and multi-dwelling housing

To satisfy the guidance objectives, dual occupancies, multi-dwelling (terraces), and multi-dwelling housing development should:

- provide deep soil in line with Table 3, Table 4 and Table 5
- locate contiguous deep soil areas to maximise the number of trees that can be planted
- provide tree planting in line with the tree canopy percentage targets **or** the tree planting rates in Table 3, Table 4 and Table 5.



## Guidance notes

- For dual occupancies and multi-dwelling housing, the deep soil and tree planting in Table 3 and Table 5 should be applied across the whole development.
- For multi-dwelling housing (terraces), the deep soil and tree planting in Table 4 should be applied to each proposed dwelling comprising the development.
- For the purposes of the guide, assumed tree sizes are summarised in Table 2. Assumed tree sizes at maturity.
- A development can deliver either the tree canopy percentage target or the tree planting rate to satisfy the guidance objectives.
- Existing canopy can contribute to achieving the targets. This guide should not be used to justify tree removal or a reduction in canopy cover.

**Table 2. Assumed tree sizes at maturity**

Size category	Min. diameter spread	Min. canopy area
Small	6 m	28 m <sup>2</sup>
Medium	8 m	50 m <sup>2</sup>
Large	12 m	113 m <sup>2</sup>

**Table 3. Tree canopy and deep soil – Dual occupancy (applies to the whole development)**

Site area	Tree canopy (min % site area)	Deep soil (min % site area)	Tree planting rate
<300 m <sup>2</sup>	15%	15%	Plant at least one small tree in the deep soil area per dwelling.
300–600 m <sup>2</sup>	20%	20%	For every 200 m <sup>2</sup> of site area or part thereof, plant at least one small tree in the deep soil area.
>600 m <sup>2</sup>	25%	25%	For every 225 m <sup>2</sup> of site area or part thereof, plant at least one medium tree in the deep soil area.

**Table 4. Tree canopy and deep soil – Multi-dwelling (terraces) (applies to each proposed dwelling)**

Site area	Tree canopy (min % site area)	Deep soil (min % site area)	Tree planting rate
<150 m <sup>2</sup>	15%	15%	Plant at least one small tree in the deep soil area per dwelling.
150–300 m <sup>2</sup>	20%	20%	For every 200 m <sup>2</sup> of site area or part thereof, plant at least one small tree in the deep soil area.
>300 m <sup>2</sup>	25%	25%	For every 225 m <sup>2</sup> of site area or part thereof, plant at least one medium tree in the deep soil area.

**Table 5. Tree canopy and deep soil – Multi-dwelling housing (applies to the whole development)**

Site area	Tree canopy (min % site area)	Deep soil (min % site area)	Tree planting rate
<1,000 m <sup>2</sup>	20%	20%	For every 300 m <sup>2</sup> or part thereof, plant at least one medium tree in the deep soil area.
1,000–3,000 m <sup>2</sup>	25%	25%	For every 200 m <sup>2</sup> or part thereof, plant at least one medium tree in the deep soil area.
>3,000 m <sup>2</sup>	30%	30%	For every 350 m <sup>2</sup> or part thereof, plant at least 2 medium trees or one large tree in the deep soil area.



## Guidance note

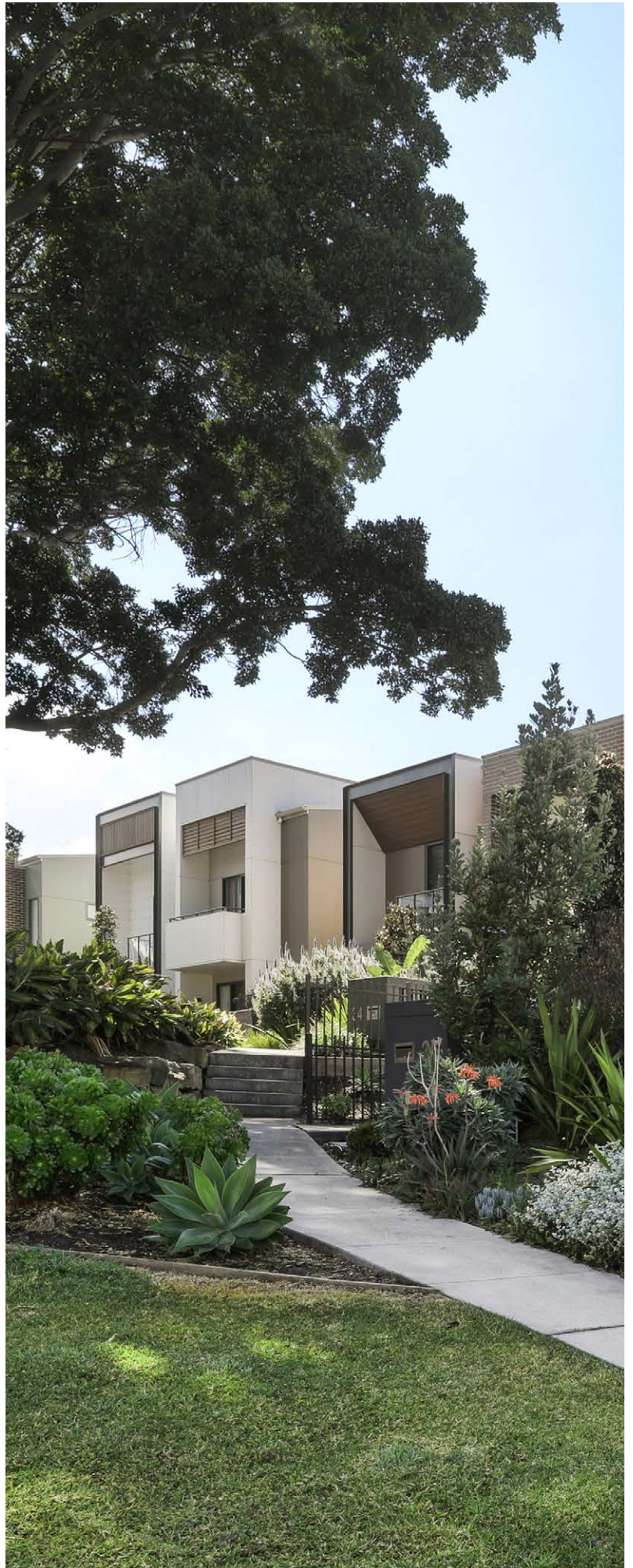
A development can meet the guidance objectives by planting trees in line with the tree planting rate or by planting a combination of trees that achieve the tree canopy percentage target. Calculate the number of trees needed to meet the canopy percentage target using the assumed canopy area of small, medium and large trees in Table 2. Assumed tree sizes at maturity.

For example, a dual occupancy on a 610 m<sup>2</sup> site can deliver 3 medium trees under the planting rate OR a mix of 2 small trees and 2 medium trees to deliver a similar canopy cover outcome.

## Guidance for residential flat buildings and shop-top housing

To satisfy the guidance objectives, residential flat buildings and shop-top housing should:

- Where the Apartment Design Guide **applies**:
  - provide deep soil and tree canopy in line with Table 6
  - seek to enhance tree canopy outcomes by providing deep soil and either the tree canopy percentage targets **or** the tree planting rates in Table 7
  - locate contiguous deep soil areas to maximise the number of trees that can be planted.
- Where the Apartment Design Guide **does not apply**:
  - provide deep soil in line with Table 7
  - provide tree planting in line with the tree canopy percentage target **or** the tree planting rates in Table 7
  - locate contiguous deep soil areas to maximise the number of trees that can be planted.



## Guidance notes

- For residential flat buildings and shop-top housing, the deep soil and tree planting in Table 6 or Table 7 should be applied across the whole development.
- Deep soil in Table 6 aligns with the design criteria under Objective 3E-1 of the Apartment Design Guide.
- Deep soil in Table 7 aligns with the design guidance under Objective 3E-1 of the Apartment Design Guide.
- For the purposes of this guide, assumed tree sizes are summarised in Table 2. Assumed tree sizes at maturity.
- A development can deliver either the tree canopy percentage target or the tree planting rate to satisfy the guidance objectives.
- Existing canopy can contribute to achieving the targets. This guide should not be used to justify tree removal or a reduction in canopy cover.

**Table 6. Tree canopy and deep soil (residential flat buildings and shop-top housing)**

Site area	Tree canopy (min % site area)	Deep soil (min % site area)
All lots	15%	7%

**Table 7. Tree canopy and deep soil (residential flat buildings and shop-top housing – enhanced)**

Site area	Tree canopy (min % site area)	Deep soil (min % site area)	Tree planting rate
<650 m <sup>2</sup>	15%	7%	For every 350 m <sup>2</sup> of site area or part thereof, plant at least one small tree in the deep soil area.
650-1,500 m <sup>2</sup>	15%	10%	For every 350 m <sup>2</sup> of site area or part thereof, plant at least one medium tree in the deep soil area.
>1,500 m <sup>2</sup>	20%	15%	For every 575 m <sup>2</sup> of site area, or part thereof, plant at least 2 medium trees or one large tree in the deep soil area.

## Guidance note

A development can meet the guidance objectives by planting trees in line with the tree planting rate or by planting a combination of trees that achieve the tree canopy percentage target. Calculate the number of trees needed to meet the canopy percentage target using the assumed canopy area of small, medium and large trees in Table 2. Assumed tree sizes at maturity.

For example, a residential flat building on a 1,745 m<sup>2</sup> site can deliver 3 large trees under the planting rate OR a mix of 2 large trees, 2 medium trees and 1 small tree to deliver a similar canopy cover outcome.



# Glossary

Term	Definition
<b>Contiguous soil zones</b>	Deep soil zones that are connected within and between property boundaries
<b>Deep soil</b>	<p>A landscaped area connected horizontally to the soil system and local ground water system beyond and is unimpeded by any building or structure above or below ground with the exception of minor structures*.</p> <p>Deep soil zones with a minimum dimension of 3m allows sufficient space for the planting and healthy growth of new trees that provide canopy cover and assist with urban cooling and infiltration of rainwater to the water table. Deep soil also allows for the retention of existing trees.</p> <p>* Minor structures are defined as:</p> <ol style="list-style-type: none"><li>path, access ramp or area of paving with a maximum width up to 1.2m</li><li>essential services infrastructure (such as stormwater pipes) with a maximum diameter up to 300mm</li><li>landscape structures (such as lightweight fences, light poles or seating) requiring a footing with a maximum size of up to 300mm x 300mm in cross section.</li></ol> <p>The 3 m dimension in deep soil refers to 3 m in every horizontal direction (length and width). This means deep soil is a minimum 9 m<sup>2</sup> (3 m x 3 m).</p>
<b>Tree</b>	A long-lived woody perennial plant greater than (or usually greater than) 3 m in height with one or relatively few main stems or trunks (or as defined by the determining authority)
<b>Tree canopy</b>	The layer of leaves, branches and stems of a tree that provide coverage of the ground when viewed from above, or the combined canopy area of a group of trees
<b>Tree planting rate</b>	The minimum number of trees to be provided in deep soil zones

