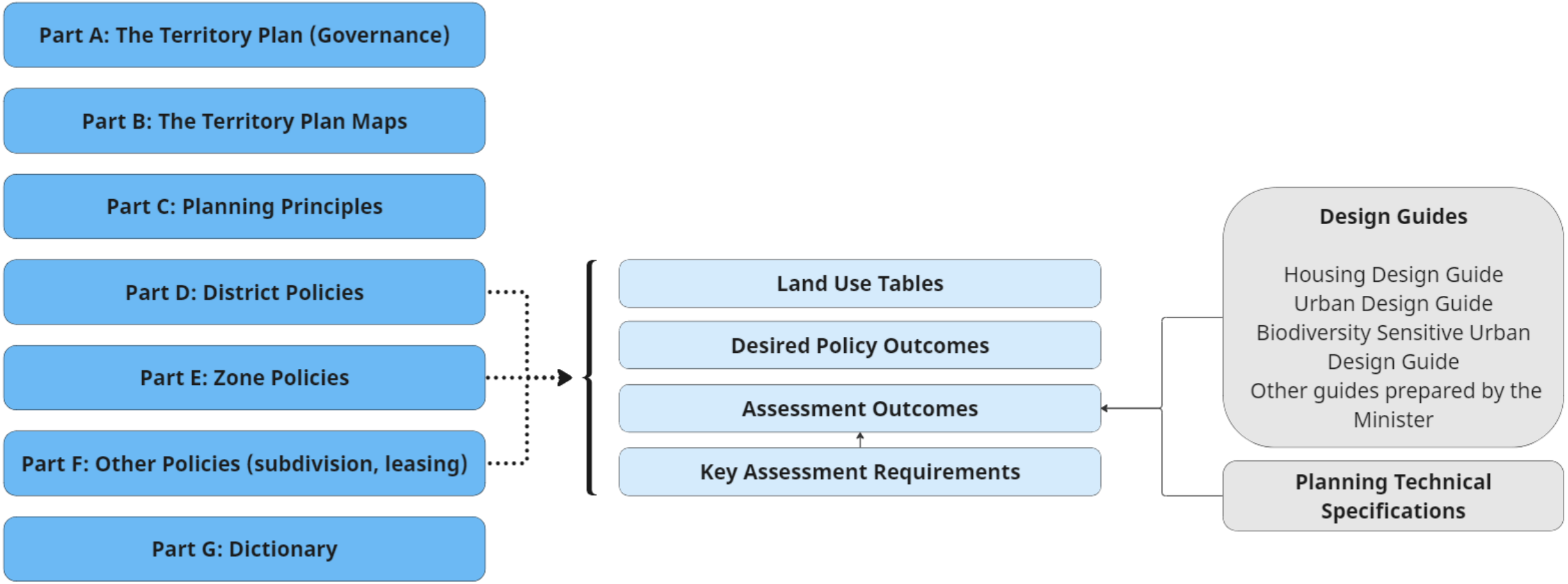
Living infrastructure in residential zones

27 June 2023

Overview

- New Territory Plan structure
- V369 – where did the living infrastructure requirements go?
- What has changed with the new system
- What is new in the new system
- Assessment outcomes
- Design guide considerations

Territory Plan structure



Assessment outcomes

Sustainability and environment

8. [Residential zones] Sufficient planting area and canopy trees are provided, and roofed areas and hard surfaces limited, to reduce urban heat island effects, minimise stormwater run-off and maintain ecosystem services. This includes consideration of water sensitive urban design measures.

   [Commercial zones] Urban heat island effects are reduced, stormwater run-off is minimised and ecosystem services are maintained through provision of planting area and canopy trees, limiting impervious surfaces, selection of building materials and design of outdoor spaces. This includes consideration of water sensitive urban design measures.

9. Deep soil zones are provided on site to support healthy tree growth and provide adequate room for canopy trees.

Public realm and amenity

17. The development achieves reasonable solar access and microclimate conditions in the public realm and streets to support their use by the community.

V369 – where did the requirements go?

Definitions

V369 provision	Reference in new Territory Plan/guides/specs
Deep soil zone	Dictionary
Planting area	Dictionary
Site coverage	Dictionary

V369 – where did the requirements go?

Single dwellings

V369 provision	Reference in new Territory Plan/guides/specs
Requirement for planting area: • Large blocks – before and after 1 Jan 2020 • Mid-sized – blocks before and after 1 Jan 2020 • Compact blocks – before and after 1 Jan 2020	Residential Zones Specification: 8.1 – planting area
Site coverage	Residential Zones Policy – Assessment requirement 1 a), b) & c)
Tree planting requirement (blocks before 1 Jan 2020)	Residential Zones Specification: 8.2 – tree planting

V369 – where did the requirements go?

Multi-unit housing

V369 provision	Reference in new Territory Plan/guides/specs
Site open space • RZ1 and RZ2 – before and after 1 Jan 2020 • RZ3, RZ4, RZ5 – blocks before 1 Jan 2020	Residential Specification: 8.1 – planting area
Planting area – blocks before 1 Jan 2020	Residential Specification: 8.1 – planting area HDG - 5.2A Deep soil planting and tree canopy cover
Tree canopy cover – blocks before 1 Jan 2020	Residential Specification: 8.3 – tree canopy cover HDG - 5.2A Deep soil planting and tree canopy cover
Planting area criterion – blocks before 1 Jan 2020	Residential Zones Specification: 8.4 – health of tree
Tree planting requirement – blocks before 1 Jan 2020	Residential Zones Specification: 8.2 – tree planting HDG - 5.2A Deep soil planting and tree canopy cover
Site coverage – blocks before 1 Jan 2020 • RZ1 and RZ2 • RZ3, RZ4 and RZ5	Residential Zones Policy RZ1 & RZ2 - Assessment requirement 2 RZ3,4 & 5 - Assessment requirement 3

What has changed

- Provisions apply to all blocks, not just those created before 1 Jan 2020

- Site coverage
  - Single dwellings – now mandatory (plot ratio removed)
  - Multi-unit housing – now mandatory (plot ratio removed). Percentage required increased by 5%
  - Definition amended to clarify what structures are included (e.g. roofed decks are included but not unroofed decks)

- Site open space requirement separated from private open space requirement (but amount unchanged)

What is new

Issue	Location in new system
Tree canopy cover	Guides: Housing Design, Urban Design Specifications: Commercial, Community Facilities, Subdivision
Reducing urban heat – cool roof	Guides: Housing Design, Urban Design Specifications: Commercial, Community Facilities
Reducing urban heat – cool façade	Guides: Housing Design, Urban Design Specifications: Commercial, Community Facilities
Reducing urban heat – cool paving	Guides: Housing Design, Urban Design Specifications: Commercial, Community Facilities, Subdivision
Protection from heat (childcare centres, schools, residential care and retirement village)	Specifications: Commercial, Community Facilities
Protection from heat (playgrounds and public seating	Specifications: Subdivision

What is new: design guide considerations

Housing Design Guide

5.2 Integrated Greenery and Planting:

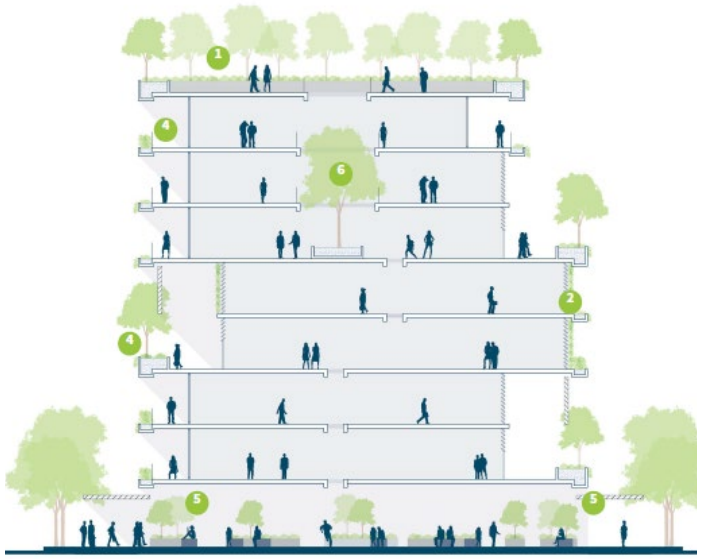
- 5.2A Deep soil planting and tree canopy cover
- 5.2B Integrated green infrastructure

5.4 Climate Resilience

- 5.4C Heatwave and urban heat island resilience

5.4C HEATWAVE AND URBAN HEAT ISLAND RESILIENCE

- → Design for passive irrigation where runoff from hard surfaces is directed into vegetation to maximise cooling effects and mitigate against run-off.
- → Use high quality insulation in walls, roofs and windows to help reduce heat transfer from the exterior environment, keeping the interior of the building cooler and reducing the need for mechanical air conditioning.
- → Use cool or reflective roof materials, such as white or light-coloured roofing, to help reduce the heat gain from the sun and keep the building interior cool.



5.2A DEEP SOIL PLANTING AND TREE CANOPY COVER

- → Provide deep soil planting zones to maximise tree canopy coverage of larger, long-lived shade trees as per Living Infrastructure Plan targets.
- → Prioritise the retention of native trees, particularly mature/ hollow-bearing trees, and their ecological context (functional surroundings) across the urban landscape.
- → Complement tree plantings with a mix of native plant species in vertical layers, to add vegetation complexity and introduce habitats for biodiversity.
- → Maintain the presence and health of significant existing trees on the site to maintain existing canopy coverage and amenity and promote natural succession and age structures, while minimising the need for new shade trees to achieve canopy coverage objectives.
- → Incorporate as much tree canopy cover as possible and as a minimum compliant with zone planning specifications to boost the presence of greenery and minimise urban heat island effects.

Design guide considerations

Urban Design Guide

4.5 Greening the Streets

- 4.5a Street planting and canopy
- 4.5b Landscaped building interface

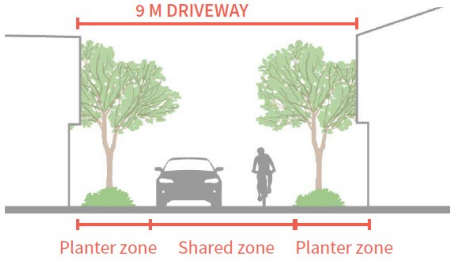
5.2 Natural Systems

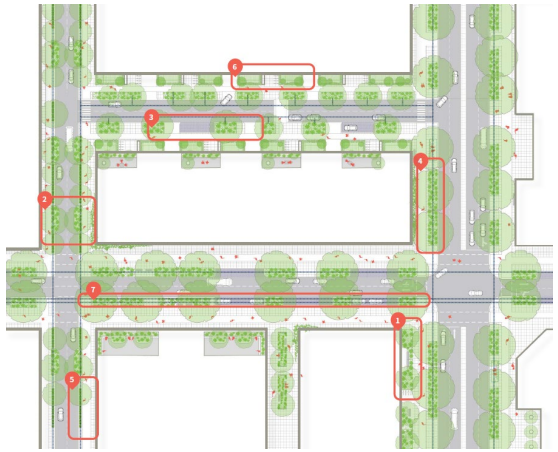
5.4 Climate Change Resilience

- 5.4a Urban heat island effect

6.5 Trees, Landscaping and Natural Features

- 6.5a Boosting tree canopy and coverage





5.4B URBAN HEAT ISLAND EFFECT

- Maximise green cover and permeability. Precincts should achieve 30% tree canopy cover and 30% permeable surfaces equitably distributed across the precinct, unless identified development constraints do not permit this to reduce heat island effect in urban environments and increase climate resilience of landscapes.
- Orient site layout and features to minimise exposure to hot summer sun and winds, while maximising access to cooling breezes and shade.
- Consider light coloured materials, particularly on rooftops and asphalt, to reduce heat impacts, including high albedo roof surface materials.
- Design for passive irrigation where run-off from hard surfaces is directed into vegetation to maximise cooling effects and mitigate against run-off.
- Create outdoor 'cool zones' that provide an opportunity for outdoor access during hot weather, and consider the integration of fountains, water play features and/or misters to provide active cooling.
- Consider cool pavement typologies that have low heat conductivity, low heat capacity and high solar reflectance to reduce urban heat and provide better performance outcomes. Refer to the Municipal Infrastructure Standards.