

**GOVERNMENT
ARCHITECT
NEW SOUTH WALES**



BIODIVERSITY IN PLACE

Webinar 1

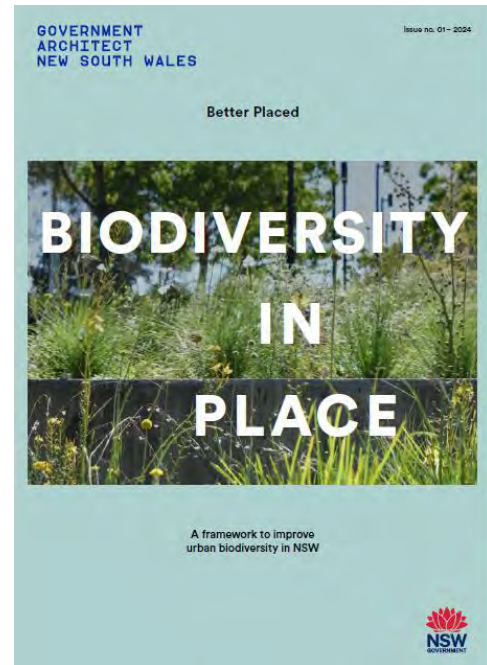
Design with Nature

12 September 2024

Barbara Schaffer

Principal Landscape Architect, GANSW

Design with Nature



State

Local Govt

Private Practice

Community

An aerial photograph of a residential neighborhood. In the foreground, there is a large, lush green field with some yellow wildflowers. The middle ground shows a dense cluster of modern, multi-story houses with dark roofs and light-colored walls. The background shows a vast expanse of similar houses stretching towards the horizon under a clear sky. The overall scene is bright and sunny, suggesting a clear day.

HOUSEKEEPING

Image: Graham Jepson

A landscape photograph showing rolling green hills under a blue sky with white clouds. In the foreground, there is a field of tall, dry grass. The text is overlaid on the image.

**IF WE CARE
FOR COUNTRY**

**IT WILL CARE
FOR US**

NSW government moves to tackle 'unfair' lack of homes near jobs and schools with more density



📷 NSW premier Chris Minns says young people are paying the price for a lack of housing growth and density in Sydney. Photograph: Brendon Thorne/Getty Images

‘The quality of open space matters as much as the quantity’

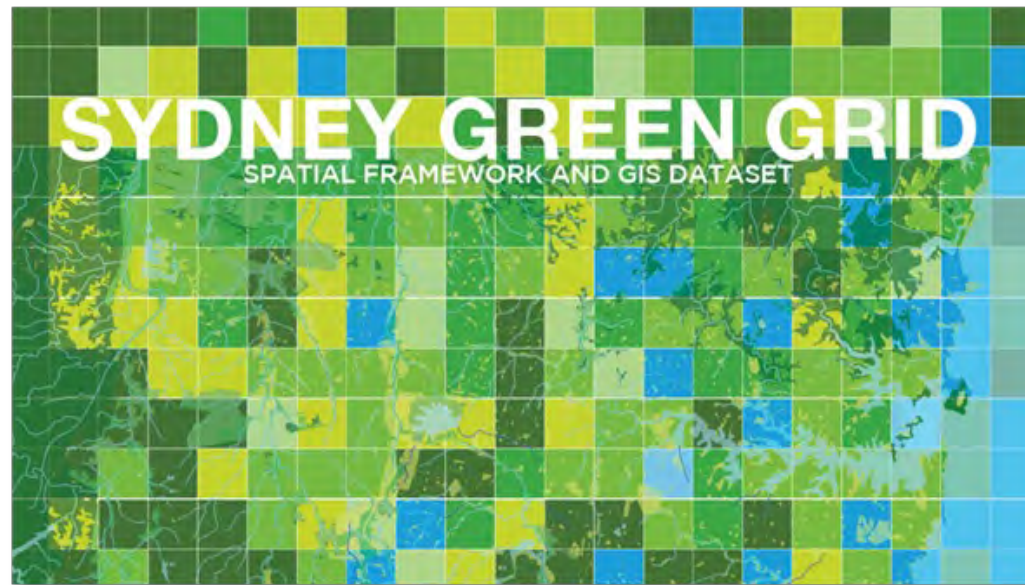
Productivity Commission 2024 Report

Greener Places and the Green Grid

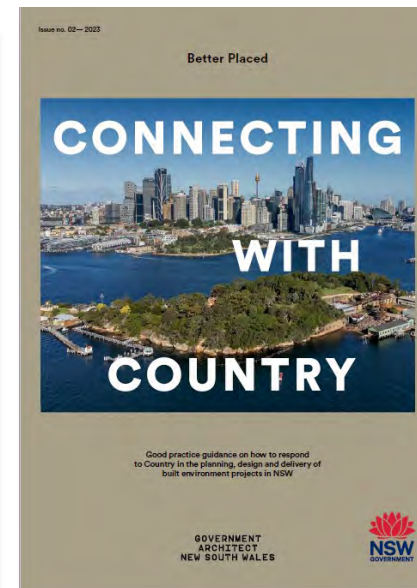
NSW has articulated a government position on the importance of green and connected places within our urban environments



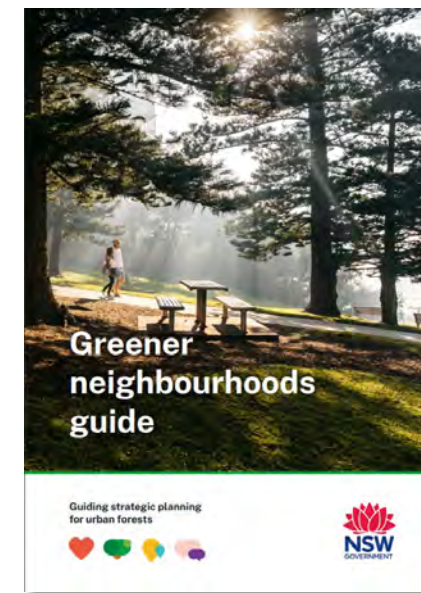
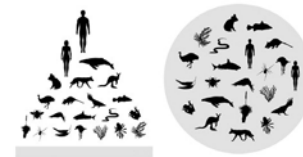
Value, Quality + Quantity



Connectivity



Country Centred



Metrics



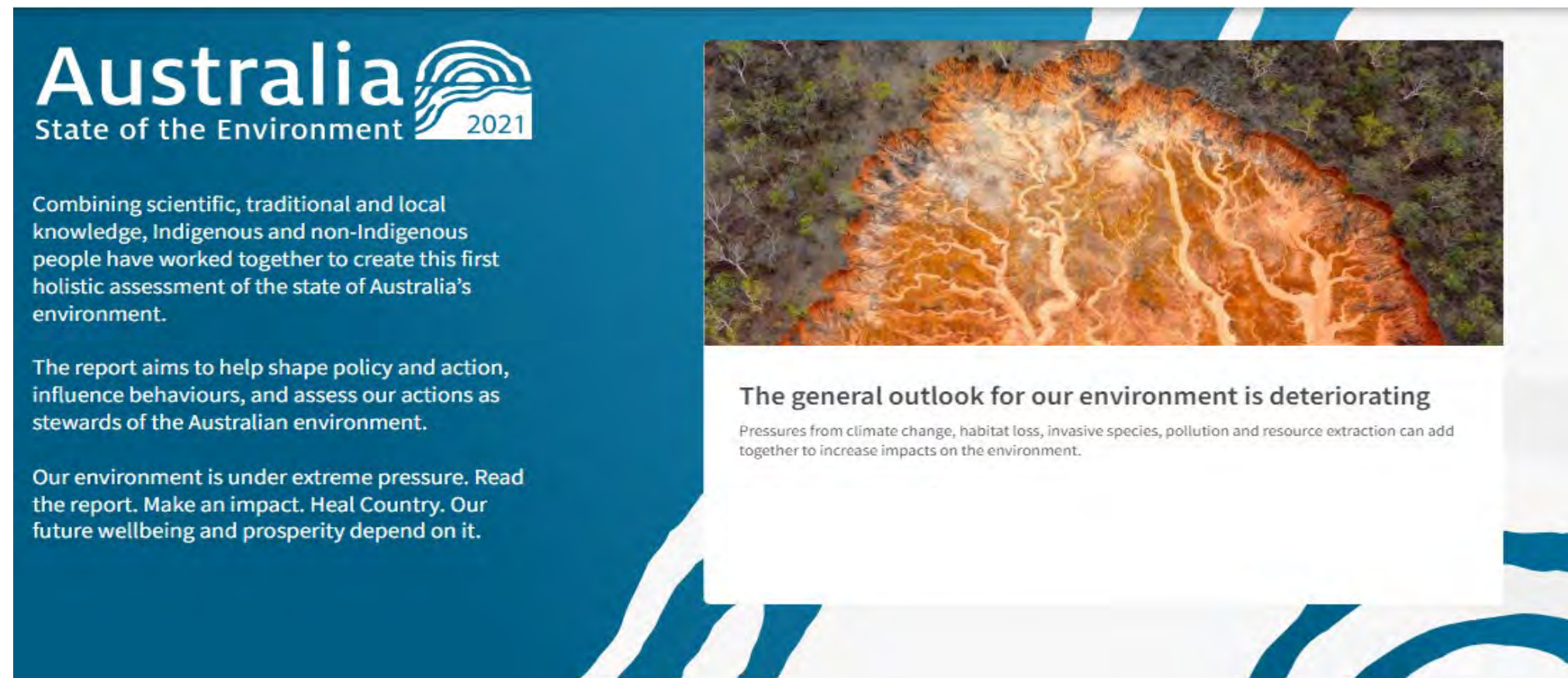
Cost Benefit


'Australia is in the midst of an extinction crisis'

Australian Conservation Foundation

Australia SOE REPORT 2021

Population growth continues to put pressure on biodiversity in Australia's urban areas and in the peri-urban spaces between suburbs and rural areas.



Australia  2021
State of the Environment

Combining scientific, traditional and local knowledge, Indigenous and non-Indigenous people have worked together to create this first holistic assessment of the state of Australia's environment.

The report aims to help shape policy and action, influence behaviours, and assess our actions as stewards of the Australian environment.

Our environment is under extreme pressure. Read the report. Make an impact. Heal Country. Our future wellbeing and prosperity depend on it.

The general outlook for our environment is deteriorating
Pressures from climate change, habitat loss, invasive species, pollution and resource extraction can add together to increase impacts on the environment.

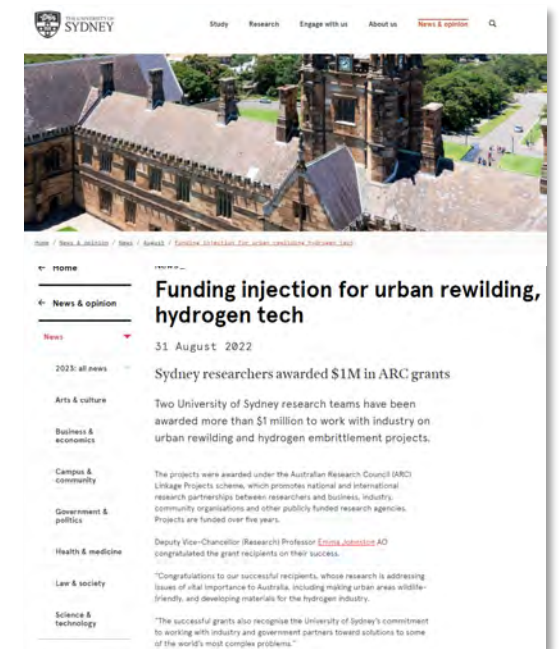
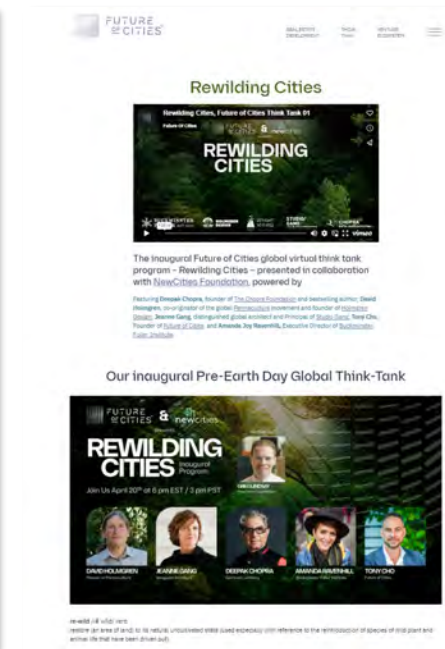
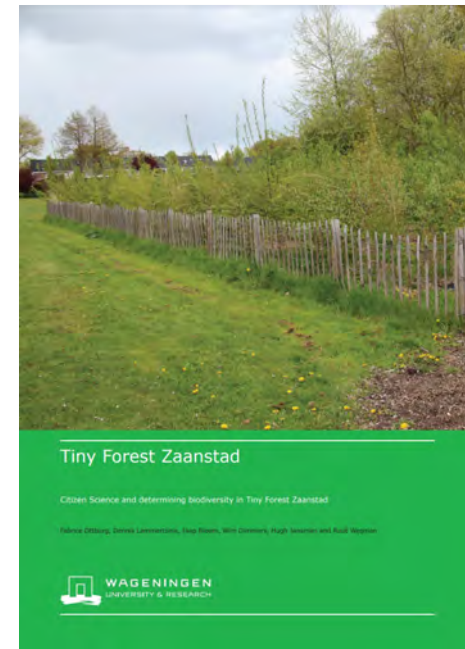
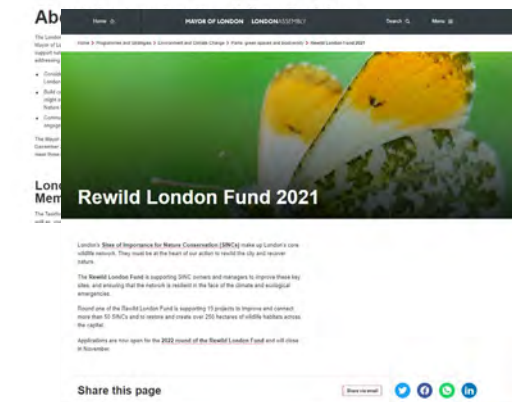
NSW SOE REPORT 2021

The changes that have occurred to our natural environment affect the richness and diversity of species and ecosystems found in NSW and their ability to survive into the future.



Global action

Action, advocacy and policy is occurring in cities across the world



Caring for Country

First Nations people have been managing the Australian landscape for thousands of years

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NEW SOUTH WALES



Image: Catherine Leo

‘While our national parks and wilderness areas are essential for protecting biodiversity, our cities and towns also provide critical habitat for threatened species.’

Australian Conservation Foundation

Image: Jessica Maurer, Dirt Witches



‘25% of Australia’s nationally listed threatened plants and 46% of threatened animals can be found in our urban areas...

...for 39 threatened species...urban areas are the last remaining places in which they exist.’

Australian Conservation Foundation

An aerial photograph of a modern residential development. The houses are arranged in a grid-like pattern around a large, central green space filled with trees and shrubs. The lighting suggests late afternoon or early morning, with long shadows and a warm glow. The text 'OUR GREEN HAS TO WORK HARDER' is overlaid in large, white, bold, sans-serif capital letters across the center of the image.

**OUR GREEN HAS
TO
WORK HARDER**

Image: Grahame Jepson

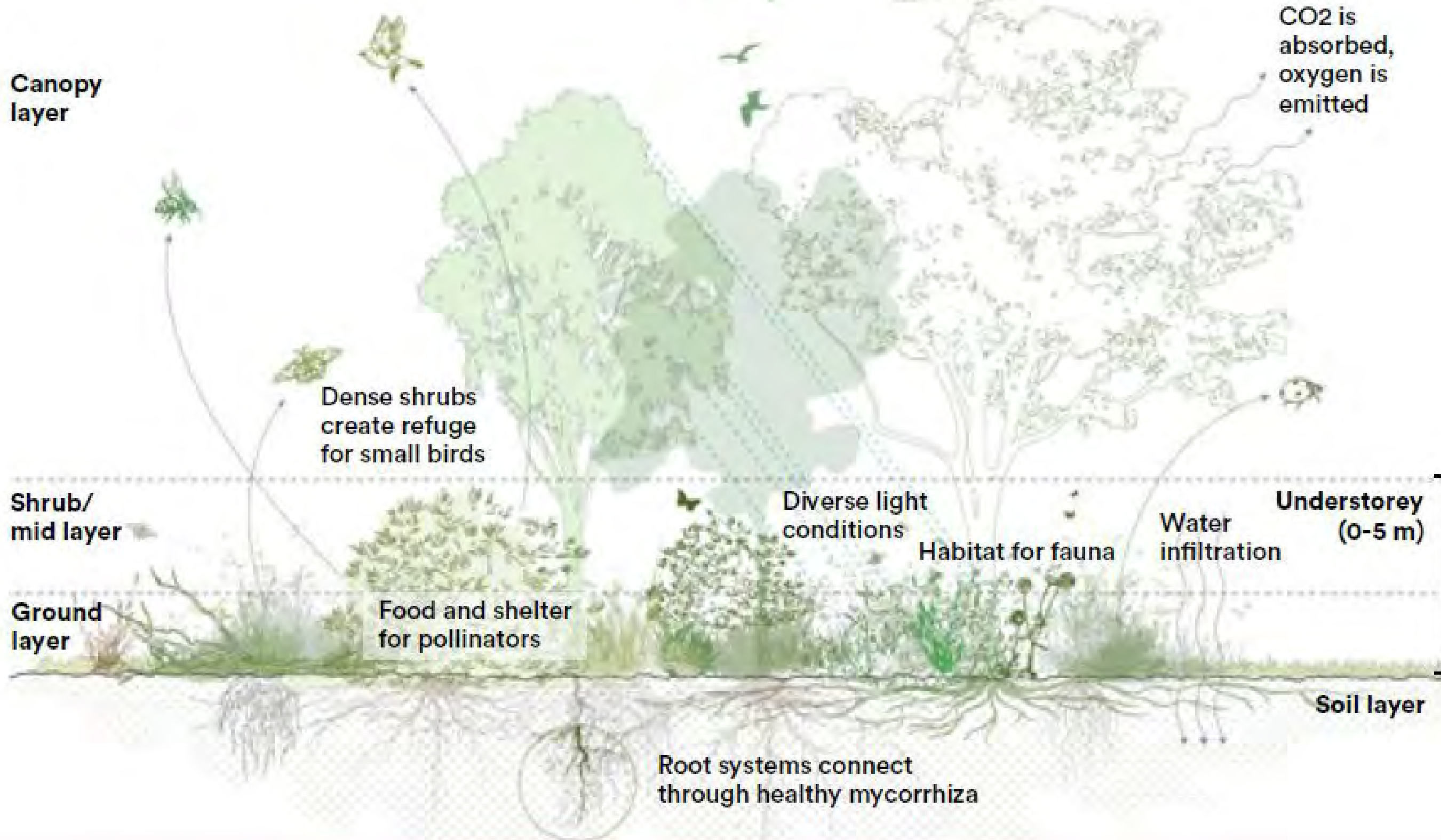


NOT ALL
GREEN IS
EQUAL

Relative monoculture



To beautifully biodiverse environments



from parks



to plazas



Image: Jon Hazelwood

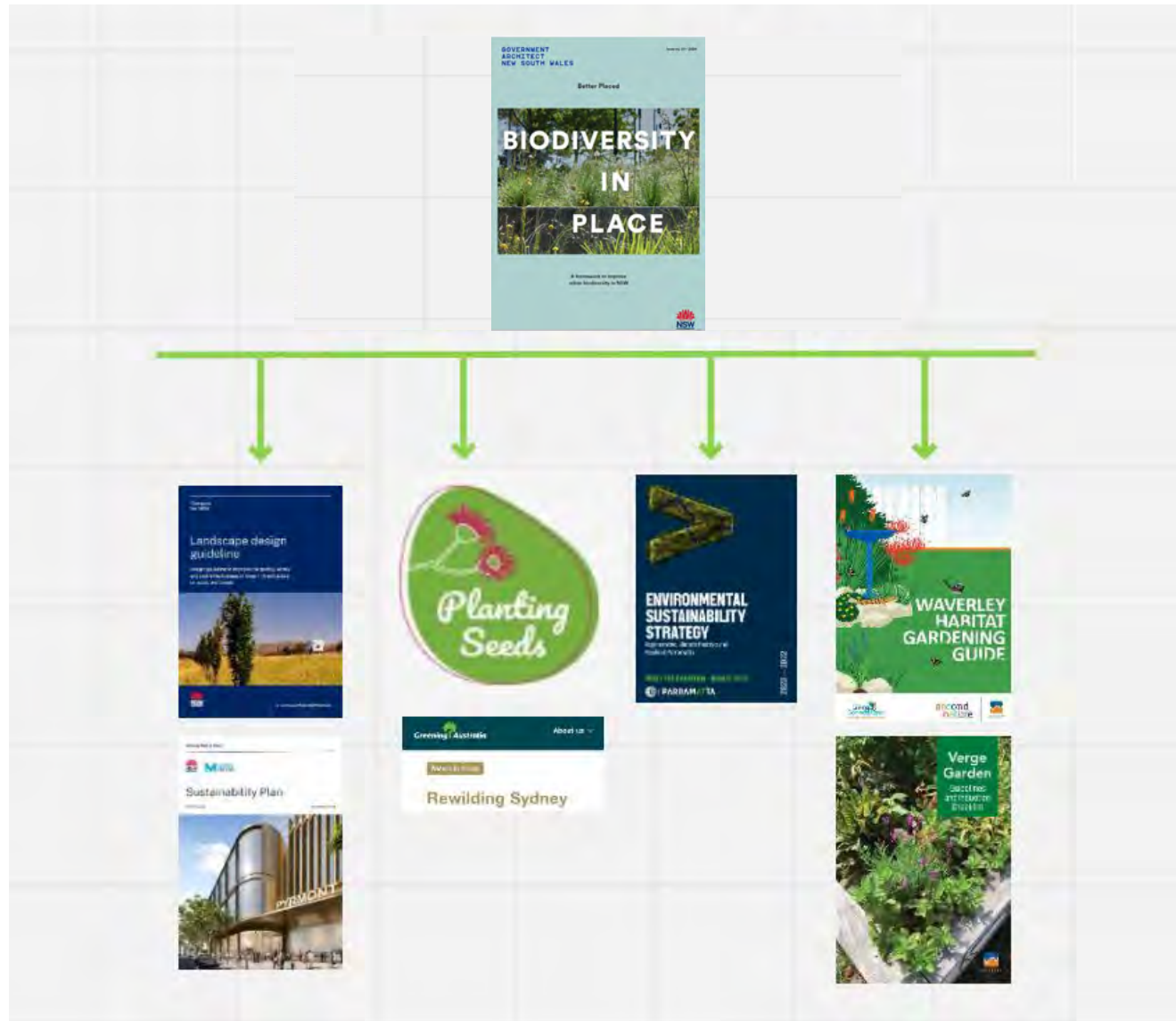
to verges



to backyards

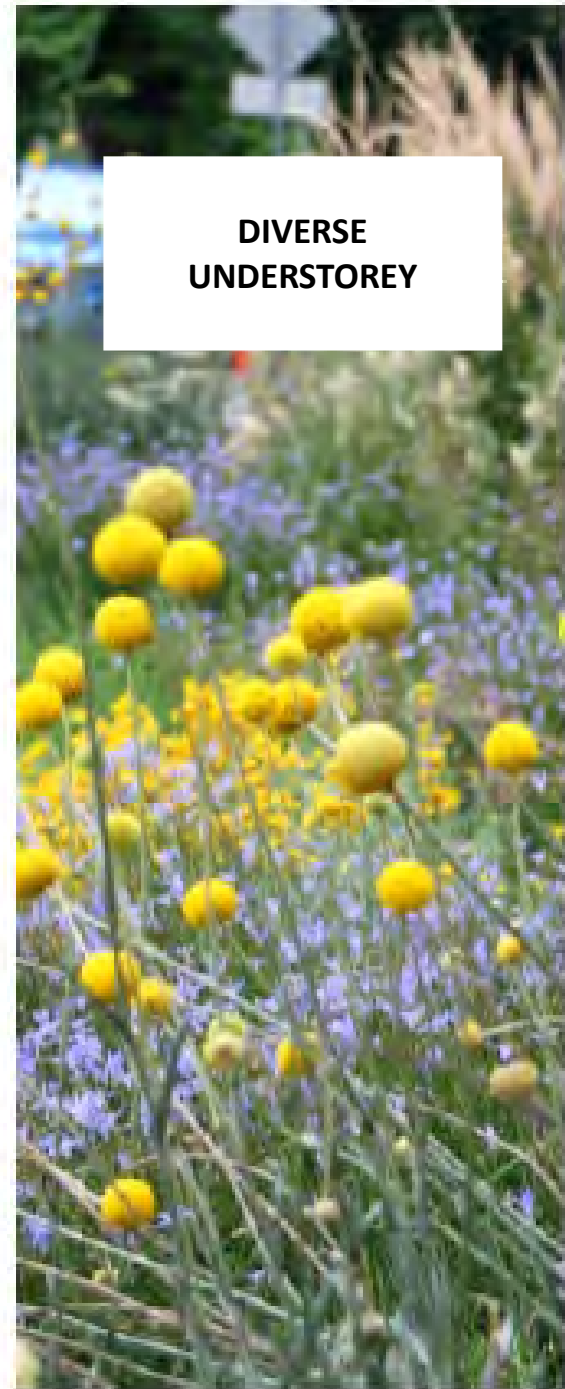


Umbrella document that offers a whole of government approach



Biodiversity in Place is a position and guidance framework offering a helping hand to communities and agencies to address the issue of biodiversity loss

Reintroducing diverse layered plantings



**DIVERSE
UNDERSTOREY**



**DIVERSE
LAYERED PLANTINGS**



**DIVERSE
FLOWERING SEASONS**

Identify places

Streets and laneways



Backyards and balconies



Schools



Green walls



Plazas and squares



Reserves



Community gardens



Golf Courses



Cemeteries



Disused lots



Private gardens



Riparian corridors



Urban parks



Regional parks



Railway corridors



Tools



Floral planting across all seasons



Support understorey establishment with high density planting



Allow spontaneous plants to grow



Retain leaf litter for soil health



Pollinator corridors



Micro forests



Insect Hotels



Bee hives



Build multi-layered planting mixes



Establish urban meadows and grasslands



Wildlife Boxes



Rock and log features

Key principles



Nature as client



For humans and non-humans



Guided by the landscape



Highly diverse planting



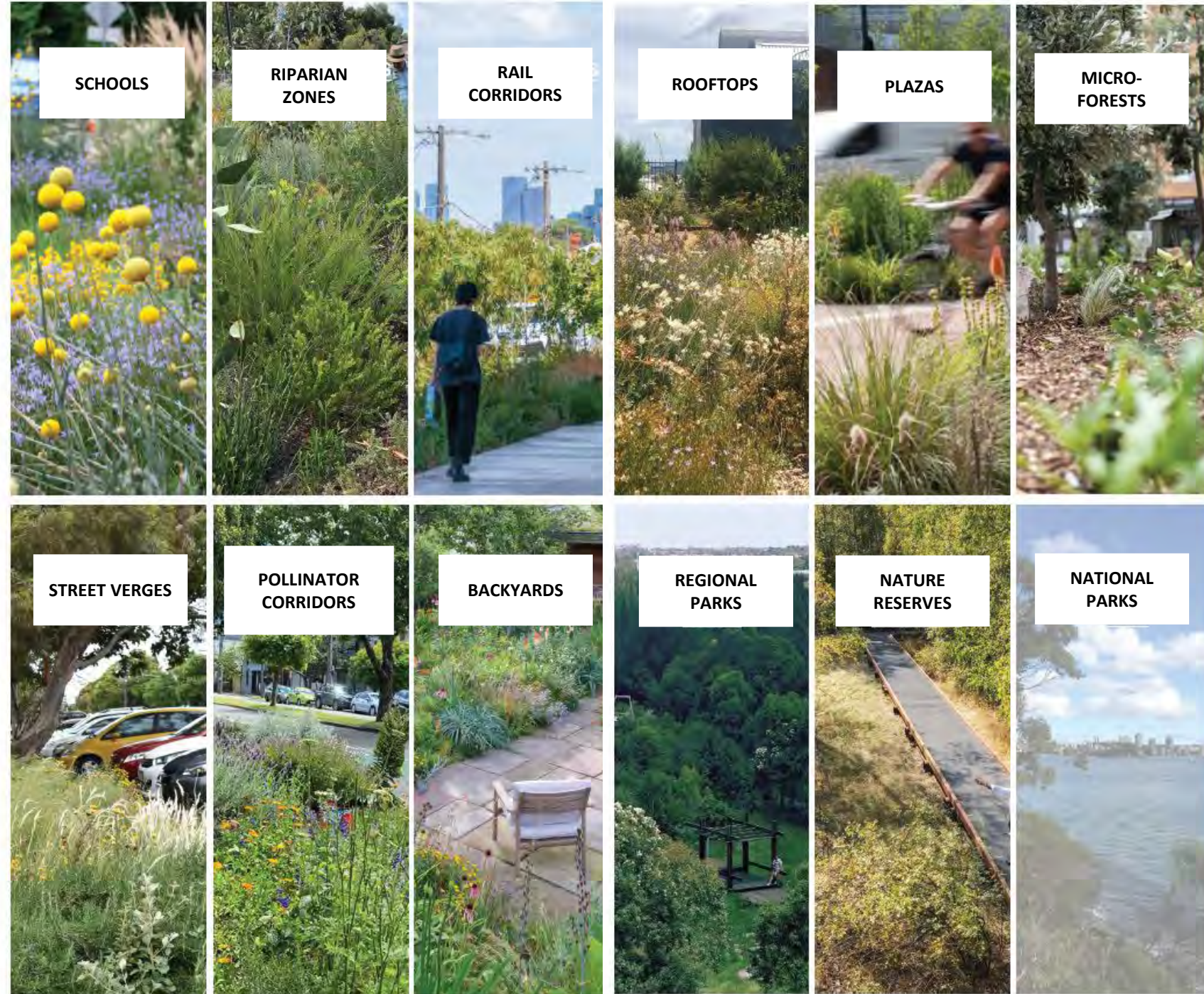
Sensitive management



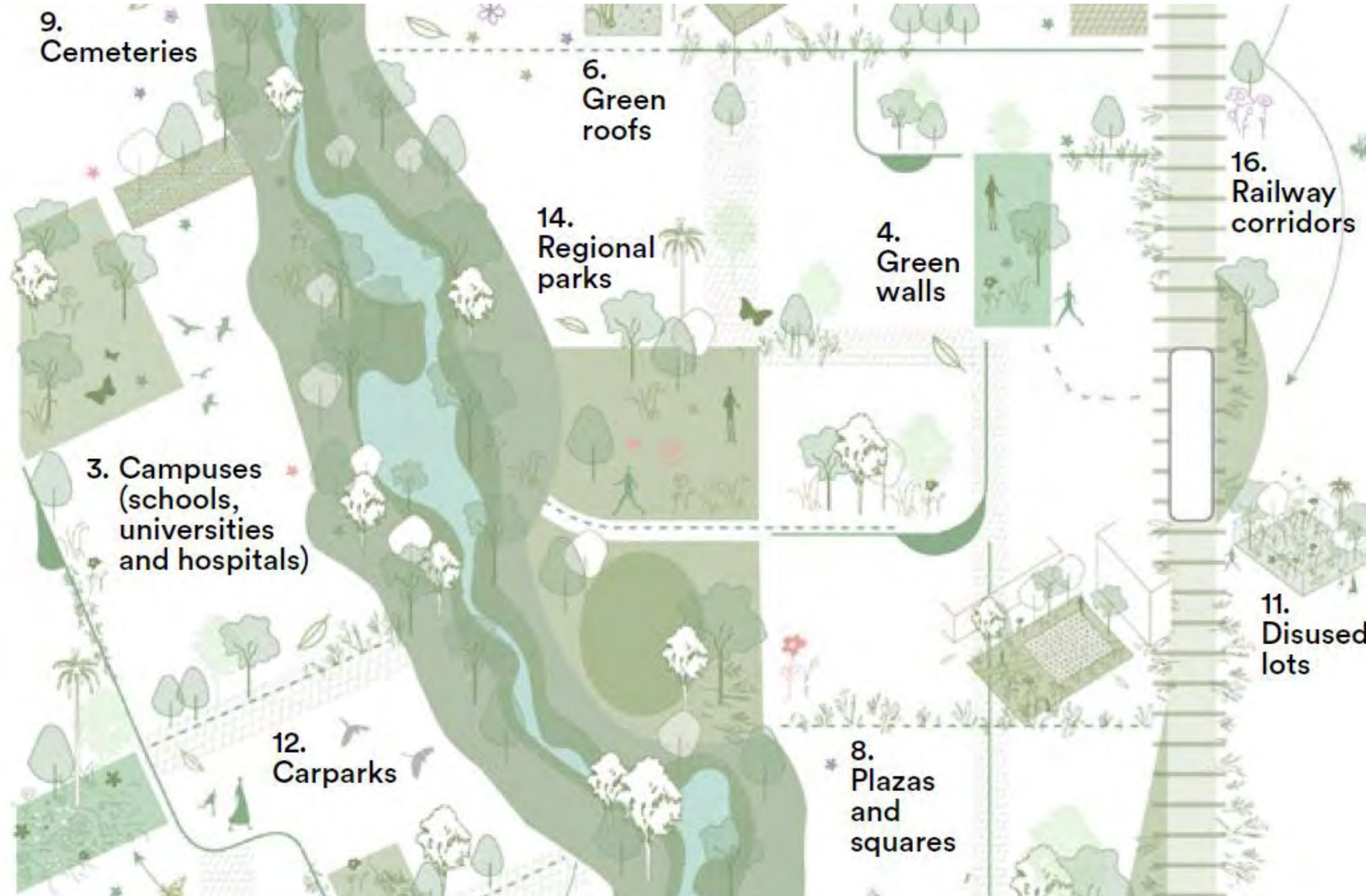
Connected across scales

Biodiversity in Place

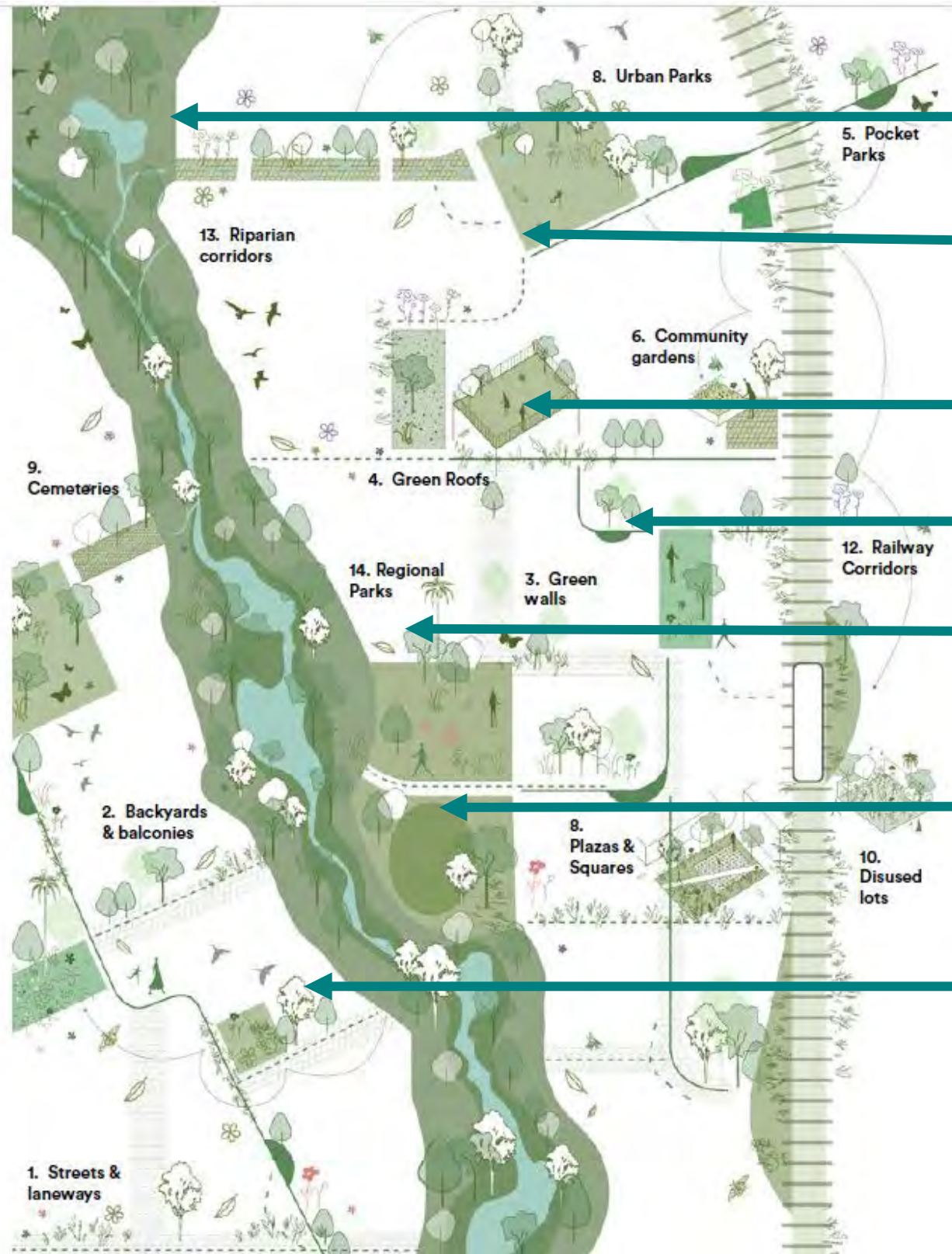
explains how communities, policy makers and industry can create nature positive cities by identifying the places and tools at a range of scales



Every place counts



Everyone can contribute



Not for Profits

Local communities

Business community

Schools

Local councils

State Government Agencies
(TfNSW, Metro, HINSW, SINSW, Ausgrid
Sydney Water)

Individuals

Parks

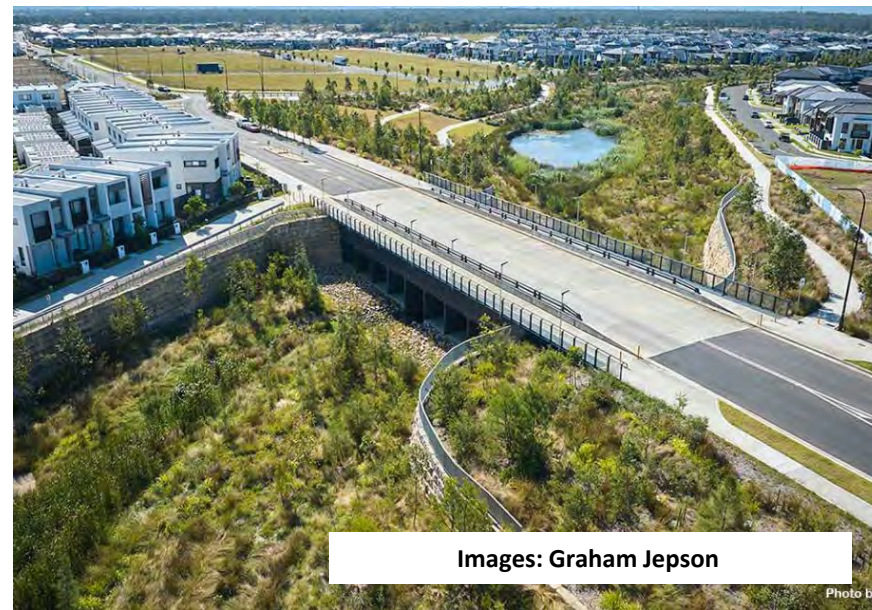
A parklands study found that when parks increase the volume of understorey vegetation from 10 to 30%, the occurrence of birds, bats and insects increased by up to 120%

Threlfall et al 2017

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Creek corridors



Images: Graham Jepson

Creeks and streams are important places for urban biodiversity. They function as wildlife corridors increasing habitat connectivity and facilitate the movement of birds, mammals and amphibians through the urban landscape.

(Litteral & Shochat et al. 2017; Bradsworth et al.2021)

Rooftop

A rooftop study in urban Sydney found that green roofs planted with native flowering plants supported 9x the number of insect species and 4x the number of bird species compared to the adjacent control site.

(Wooster et al. 2022)



Backyards

Domestic gardens make up at least half of the green space in cities. Participants in a wildlife gardening program in Melbourne reported not only wellbeing benefits but most importantly substantial increases in local biodiversity including 36 native insect species.

(Mumaw et al, 2017)



Image: Clinton Weaver

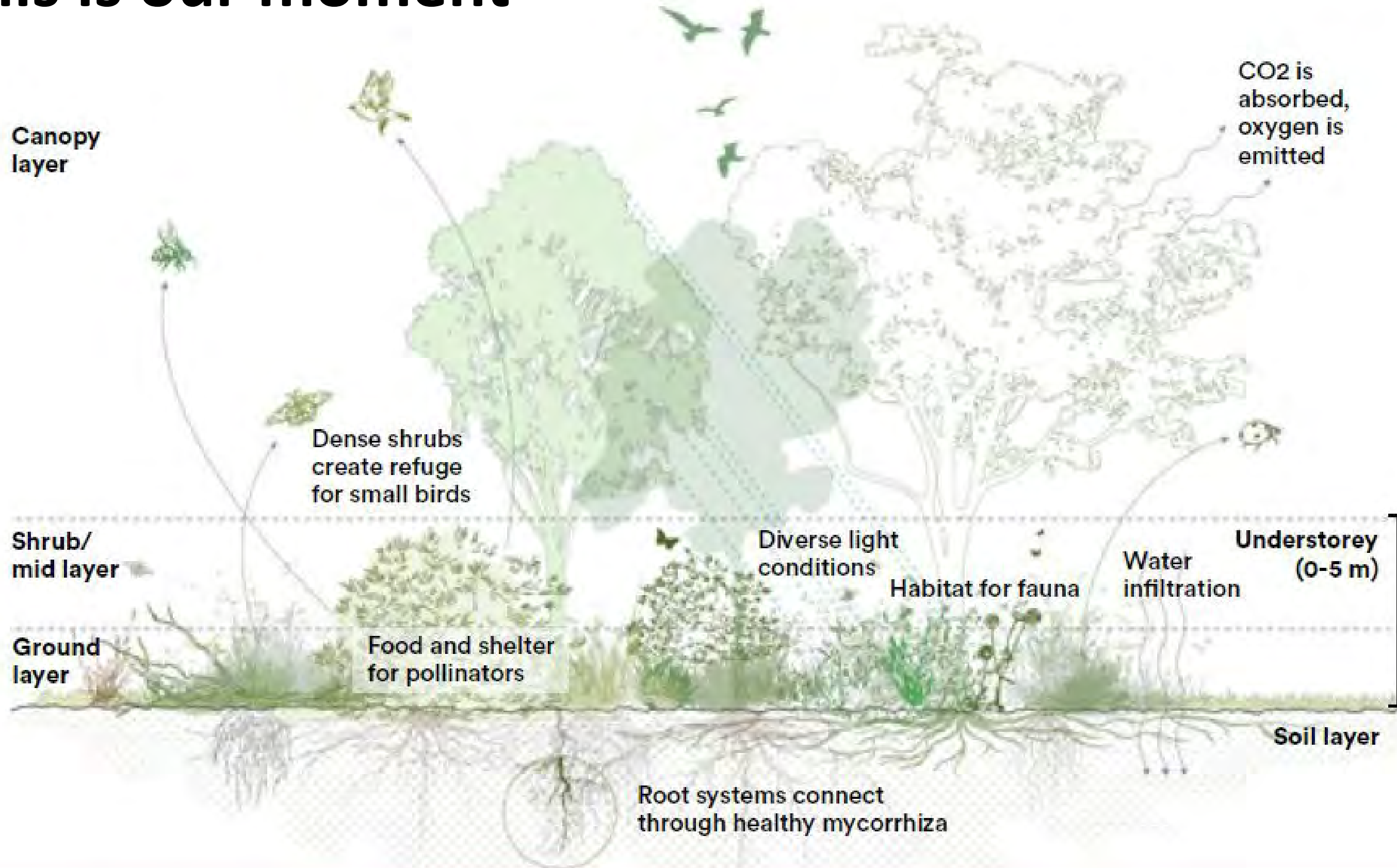
Verges

Verges account for up to 36% of all public green space in Australian cities and are often covered in exotic lawn with scattered trees. Studies in Perth demonstrate that when planted with native plants, road verges supported over 25 genera of native wildlife species.

(Pauli et al. 2020)



This is our moment



Speakers



Jon Hazelwood

Hassell



**Emma
Cutting**

Heartscapes

Speakers



**Kerri-Ann
Barry**
Camden Council



**Carmel
Hamilton**
Camden Council



**Tim
Vyse**
Camden Council




**Marco
Geretto**
GANSW



IT CAN'T ALL BE LAWN

**WE ACKNOWLEDGE TRADITIONAL OWNERS
ACROSS AUSTRALIA AS THE ORIGINAL
CUSTODIANS OF THE LAND UPON WHICH
WE WORK, AND PAY RESPECTS TO ELDERS
PAST AND PRESENT.**

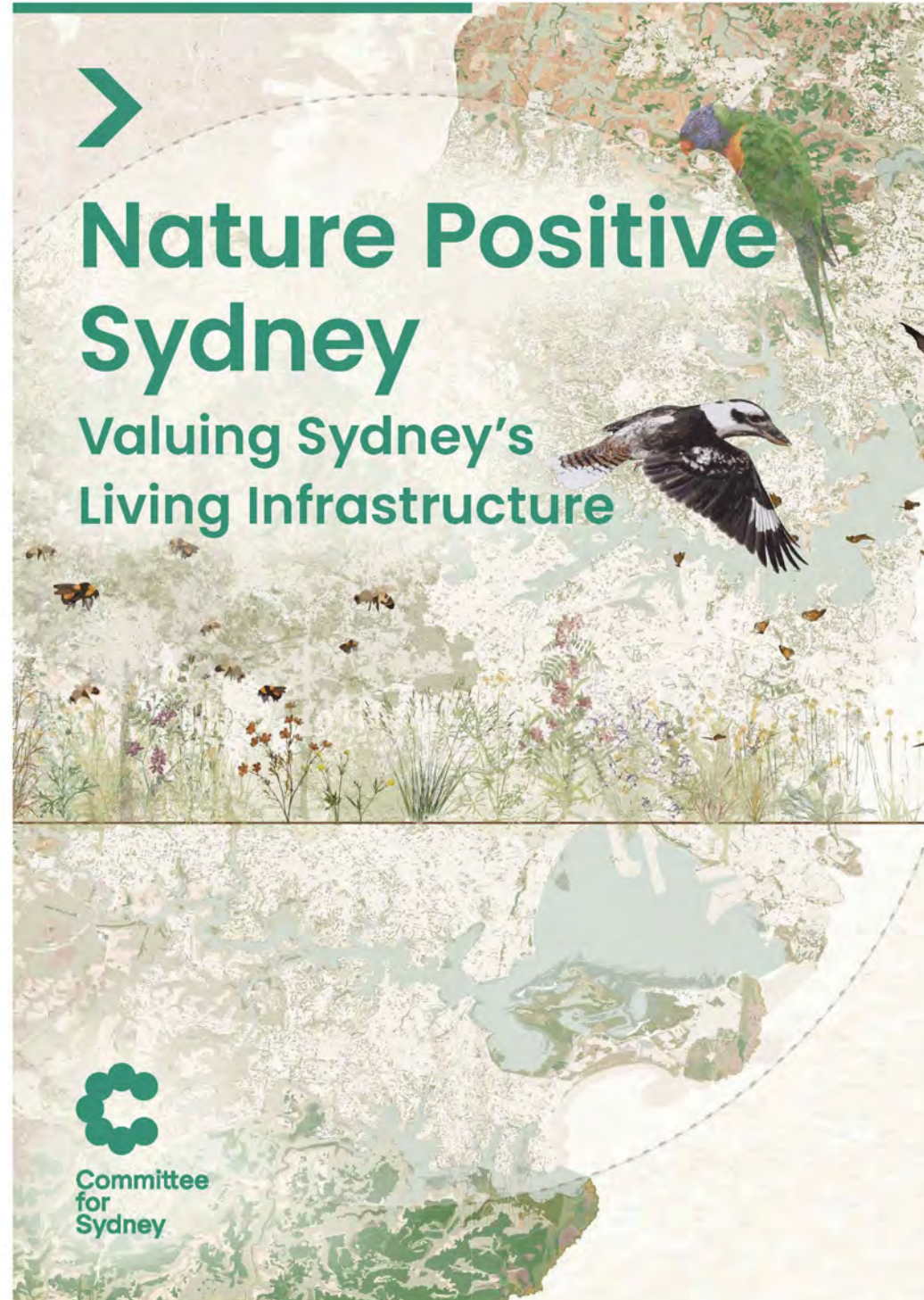
A photograph showing a row of cars parked in a lot. In the foreground, there is a field of wildflowers, including yellow and purple blooms, and tall grasses. The cars are parked in a line, with a dark grey SUV in the foreground. The background shows trees and a utility pole.

We found 30–120% higher occupancy for bats, native birds, beetles and bugs with an increase in understorey volume from 10% to 30%, and 10–140% higher occupancy across all native taxa with an increase in the proportion of native vegetation from 10% to 30%. However, increasing the density of large native trees had a mostly neutral effect ¹

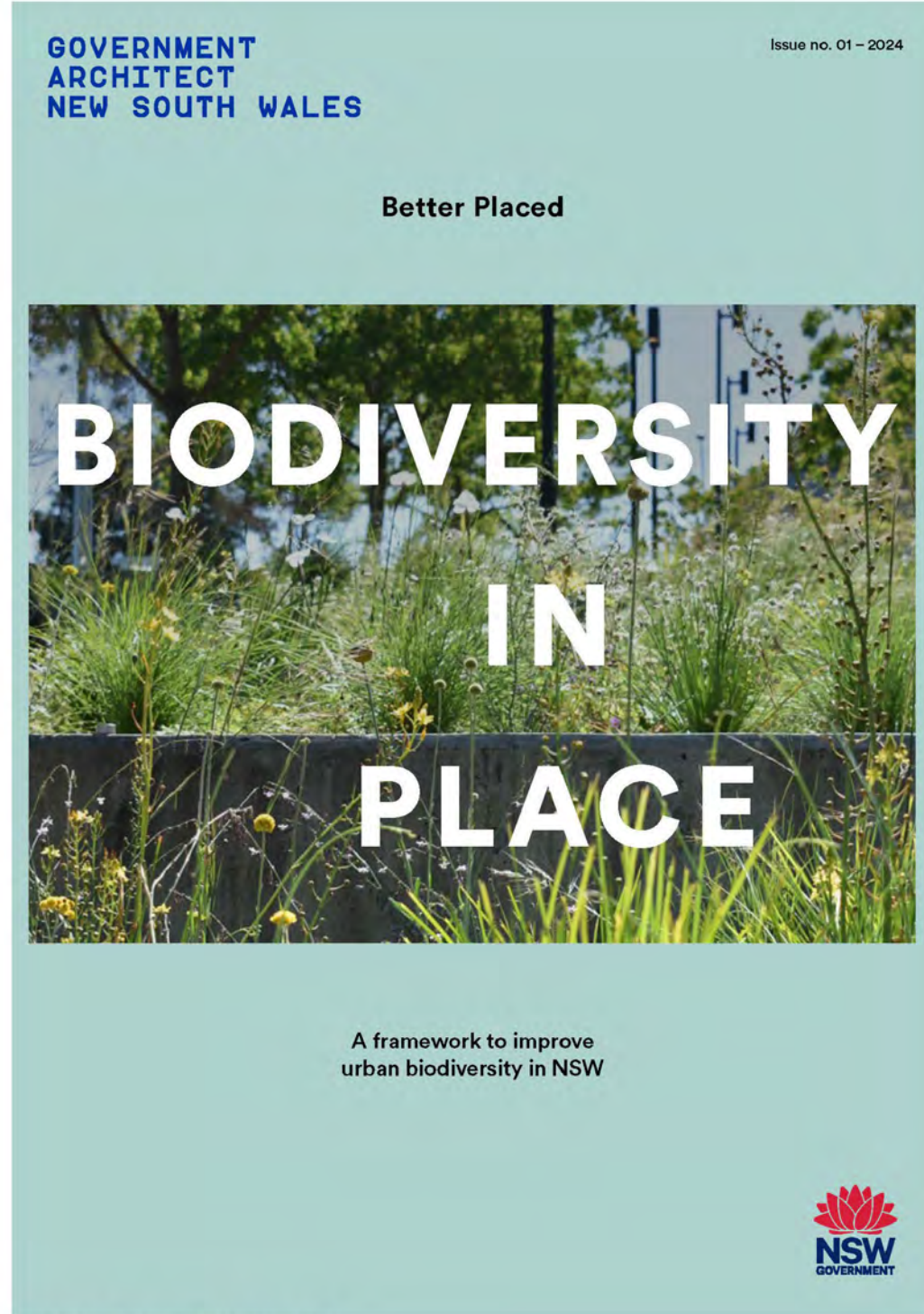
Melbourne Pollinator Corridor - Emma Cutting
Image: Jon Hazelwood

¹ Threlfall, Caragh & Mata, Luis & Mackie, Jessica & Hahs, Amy & Stork, Nigel & Williams, Nicholas & Livesley, Stephen. (2017).

ADVOCACY

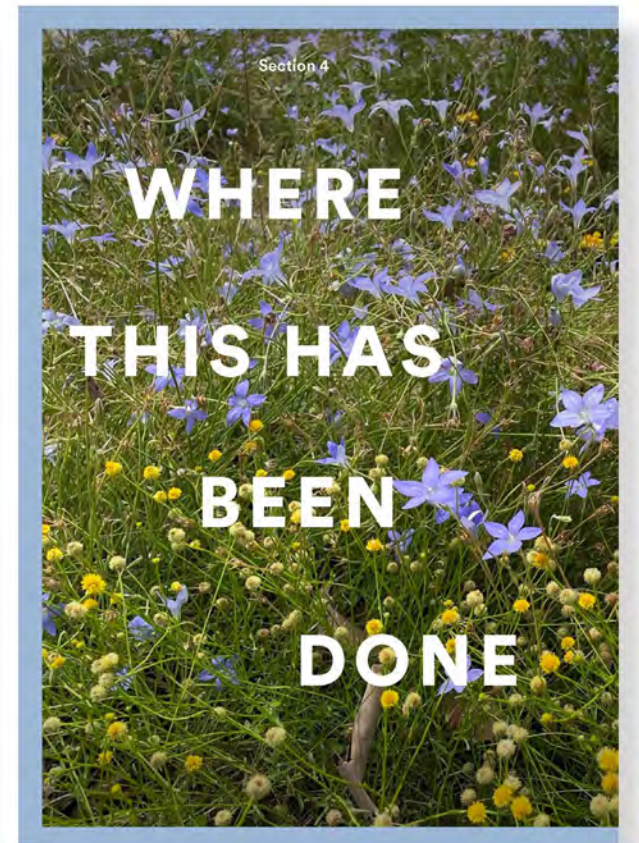
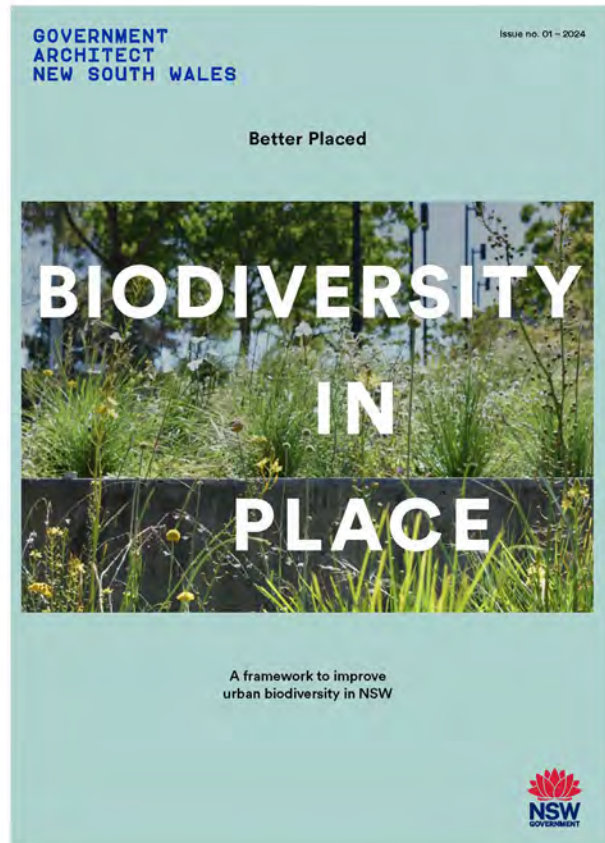


NATURE POSITIVE SYDNEY



BIODIVERSITY IN PLACE

BIODIVERSITY IN PLACE



A photograph of a bird with a long, curved beak, possibly a species of honeycreeper, perched on a thin branch. The bird has a black head and back, a white breast, and a reddish-brown belly. The background is a soft-focus green, suggesting a natural habitat with many thin branches.

PRINCIPLES

1. NATURE AS PARTNER



BEING GUIDED BY NATURE THROUGH AN UNDERSTANDING OF NATURAL PROCESSES, AND ALLOWING THESE PROCESSES TO PLAY OUT OVER TIME. THIS REQUIRES A STEP CHANGE IN HOW OUR COMMUNITIES AND STAKEHOLDERS VALUE AND PERCEIVE THE ROLE OF NATURE IN OUR PUBLIC SPACES.

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2. FOR HUMANS AND NON-HUMANS



CREATE RESILIENT SPACES FOR BOTH HUMANS AND ANIMALS TO THRIVE THROUGH CREATING NICHEs AND HABITAT OPPORTUNITIES AS WELL AS OPPORTUNITIES FOR HUMANS TO ENCOUNTER AND BE IMMERSED IN NATURE.

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3. GUIDED BY THE LANDSCAPE



**CREATE AND COMPLEXITY OF NATURE,
WITHOUT NECESSARILY ATTEMPTING
TO RECREATE IT. RESPECTING SOILS,
ASPECT AND RAINFALL AND USING AND
BEING INSPIRED BY INDIGENOUS SPECIES
WHERE APPROPRIATE TO SUPPORT
WILDLIFE.**

BIODIVERSITY IN PLACE, GOVERNMENT ARCHITECTS NSW

4. HIGHLY DIVERSE PLANTING



DIVERSE UNDERSTOREY PLANTING OF SHRUBS, GRASSES AND FLOWERING PLANTS THAT PROVIDE FRUIT, POLLEN AND NECTAR RESOURCES, WHILE ALSO CREATING BEAUTIFUL PUBLIC SPACES. DIVERSE VEGETATION WITH AN EMPHASIS ON LOCALLY INDIGENOUS SPECIES AND LOCAL PROVENANCE ENSURES A GREATER CONTINUITY OF SUPPLY RESOURCES FOR LOCAL FAUNA.

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5. SENSITIVE AND SKILLED MANAGEMENT



URBAN LANDSCAPES MUST BE MANAGED WITH CONSIDERATION FOR WILDLIFE AND BIODIVERSITY EG. REDUCING MOWING, USE OF PESTICIDES AND HERBICIDES.

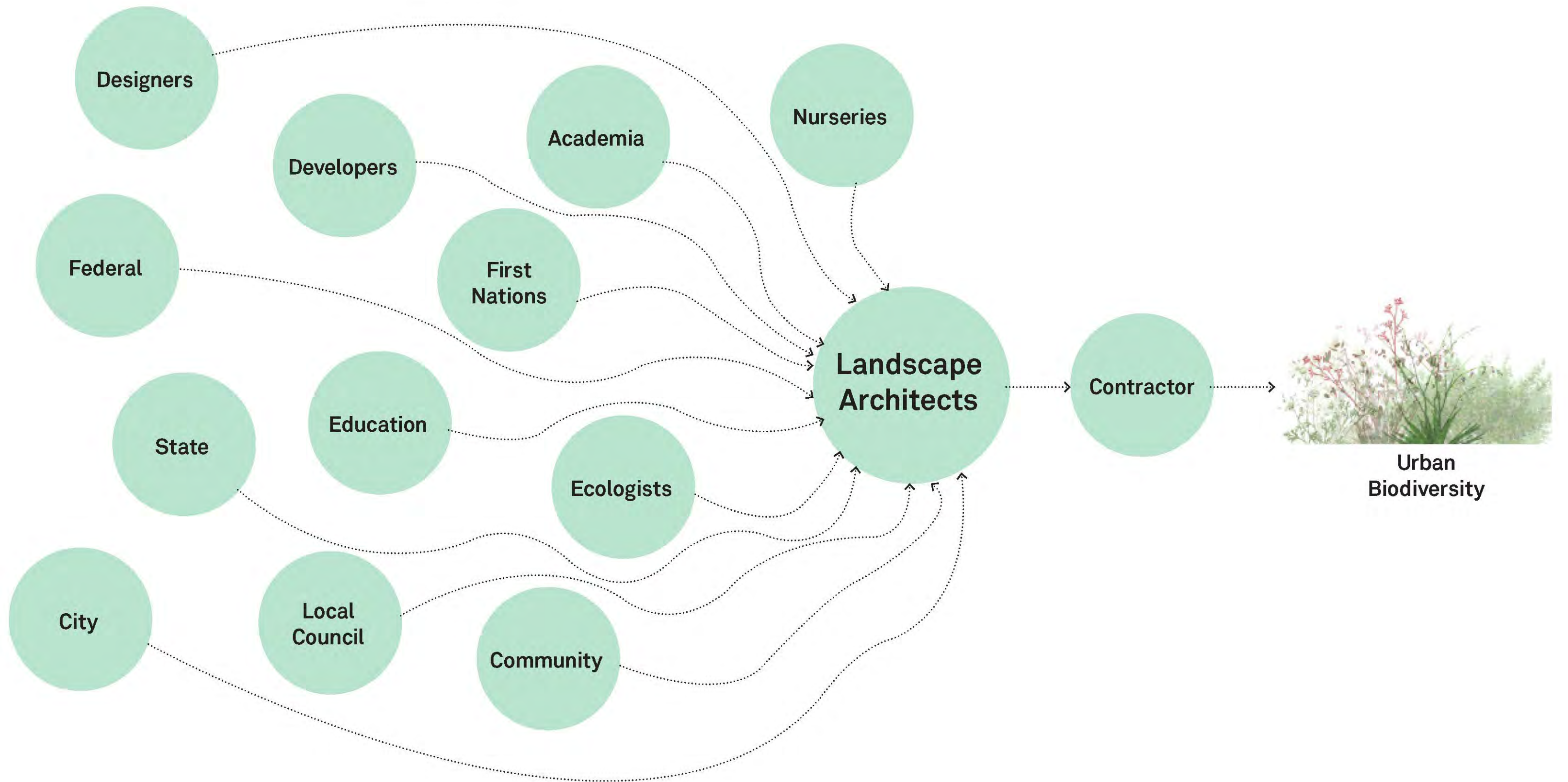
BIODIVERSITY IN PLACE, GOVERNMENT ARCHITECTS NSW

6. CONNECTED ACROSS SCALES



URBAN FROM SMALL TO LARGE, NO SPACE IS TOO SMALL TO BE VALUABLE, TO BUILD CORRIDORS AND CREATE STEPPING STONES. ONE GREEN ROOF HERE, A RAIN GARDEN THERE, OR A BEAUTIFUL POCKET OF NATURALISTIC PLANTING WILL HAVE SOME LOCAL SMALL-SCALE EFFECTS, BUT IT IS IN THE CONNECTING OF THESE ELEMENTS ON A CITY SCALE THAT WILL MAKE THEM TRANSFORMATIONAL.

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Cissus hypoglauca



Crinum pedunculatum



Correa alba 'Coastal Pink'



Correa reflexa



Dianella caerulea



Dianella revoluta



Doryanthes excelsa



Ficus pumila minima



Grevillea buxifolia



Grevillea juniperina



Grevillea linearifolia



Grevillea sericea



Hardenbergia violacea



Hibbertia scandens



Lambertia formosa



Leptospermum flavescens 'Cardwell'



Liriope muscari 'Just Right'



Liriope muscari 'Evergreen Giant'



Lomandra filiformis



Lomandra longifolia 'Verday'



Melaleuca hypericifolia



Melaleuca thymifolia



Pennisetum alopecuroides



Philodendron 'Xanadu'



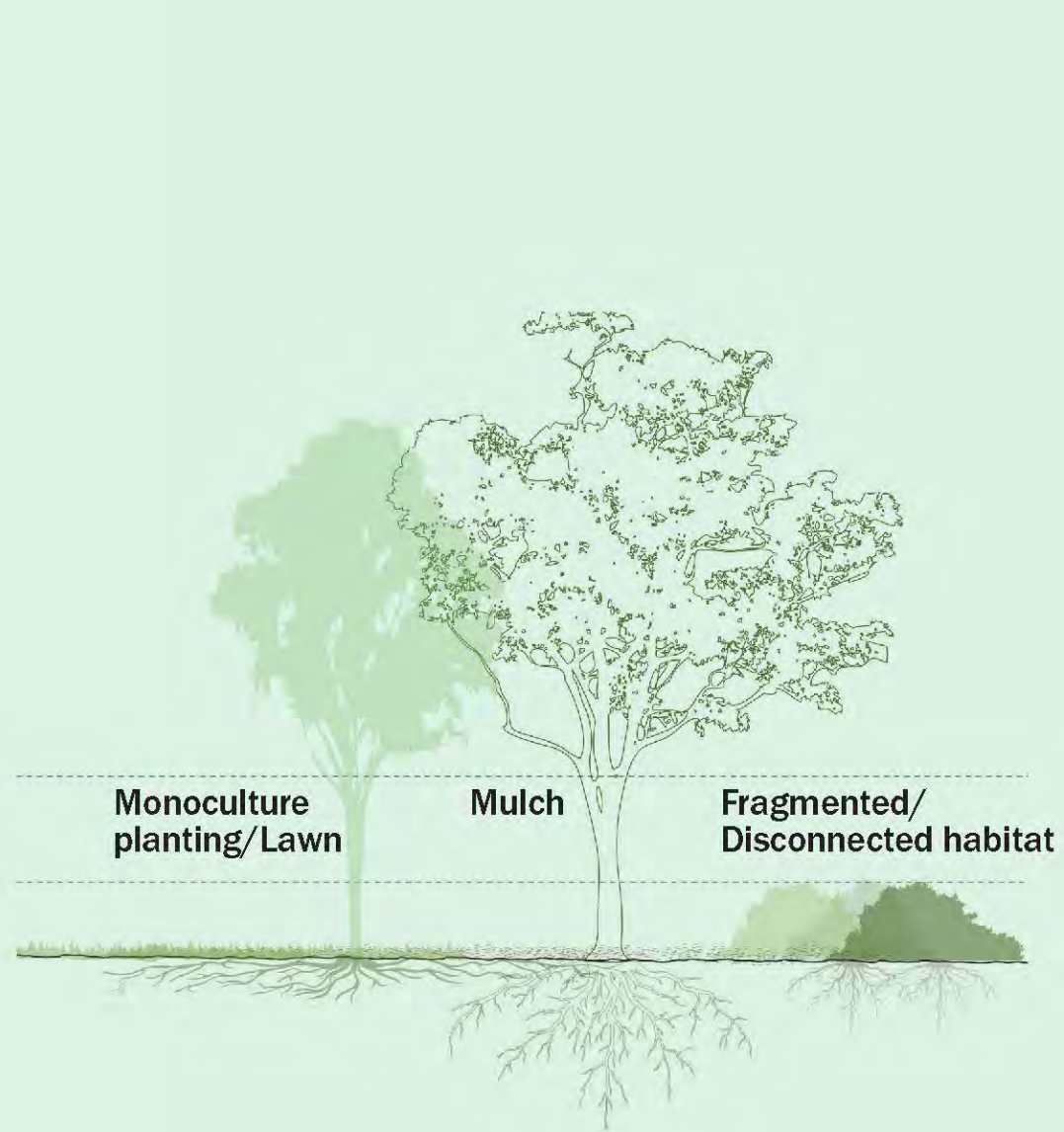
Image: Jon Hazelwood

LEARNING FROM KILLING PLANTS

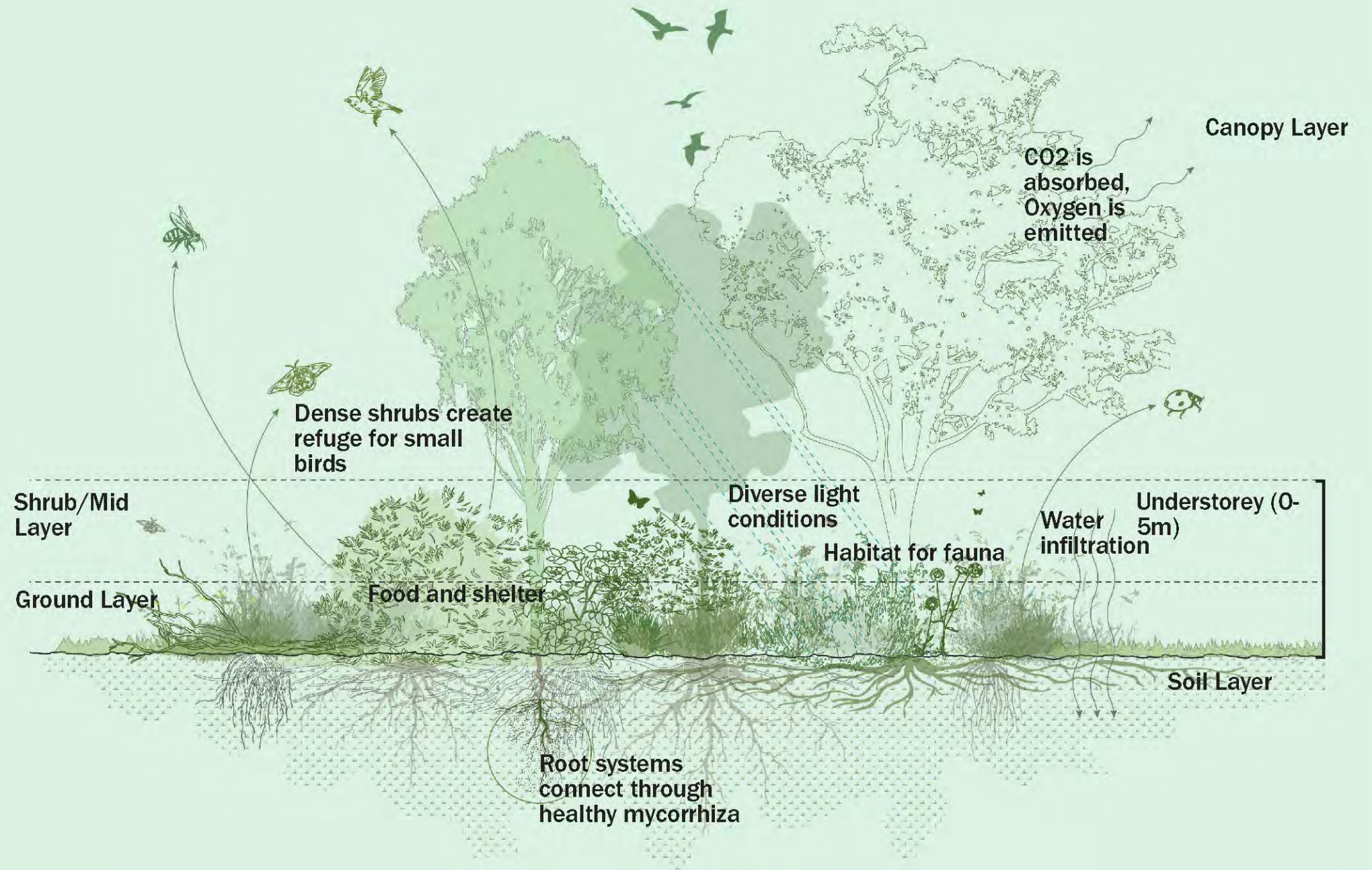


Burnley Living Roof - Hassell
Image: Hassell

DIVERSITY



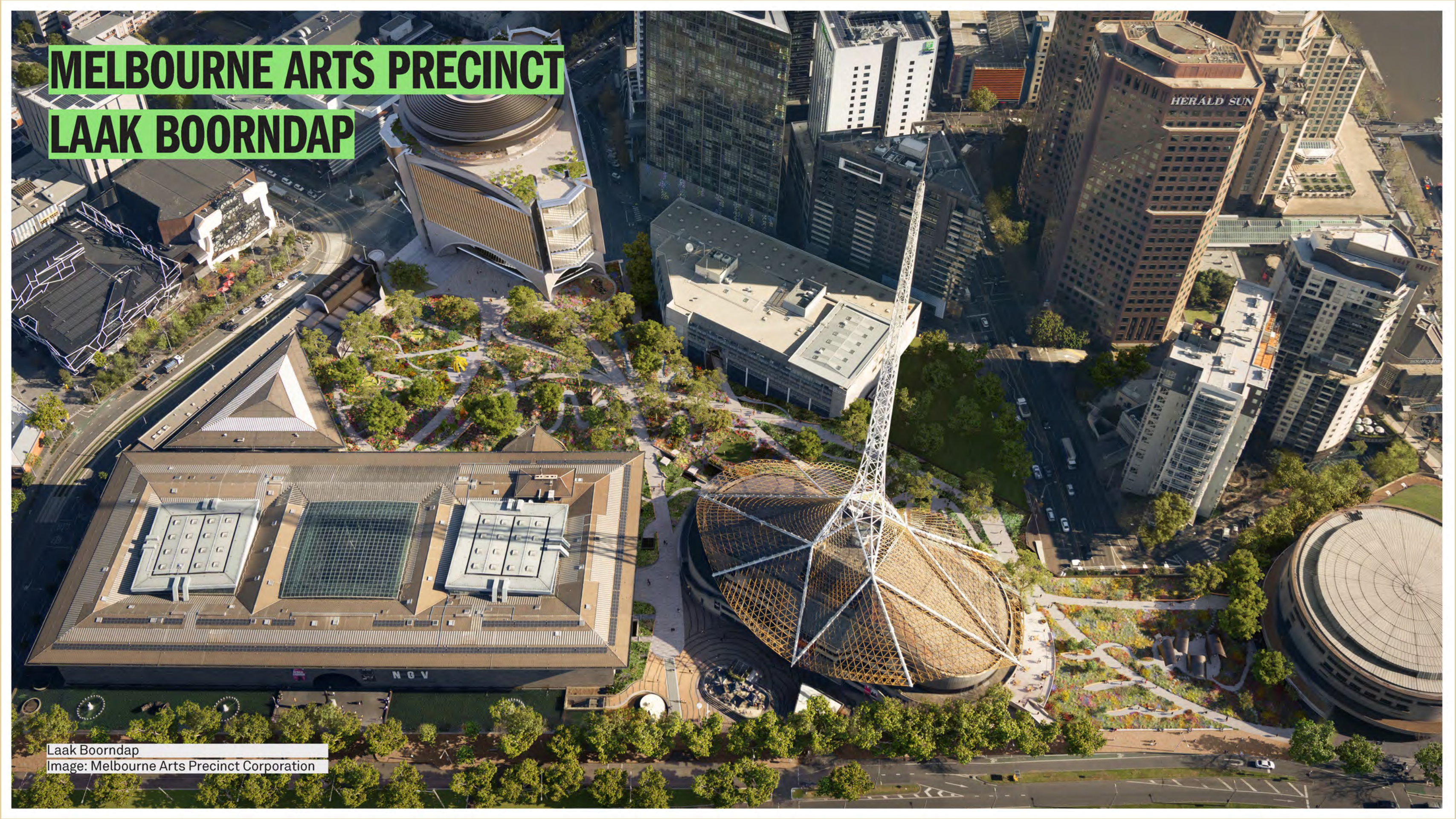
BUSINESS AS USUAL



BIODIVERSITY IN PLACE

MELBOURNE ARTS PRECINCT

LAAK BOORNDAP



Laak Boorndap
Image: Melbourne Arts Precinct Corporation

MELBOURNE ARTS PRECINCT

LAAK BOORNDAP



Laak Boorndap
Image: Melbourne Arts Precinct Corporation

MELBOURNE ARTS PRECINCT

LAAK BOORNDAP



Laak Boorndap
Image: Melbourne Arts Precinct Corporation



HILLS SHOWGROUND - SYDNEY METRO PLANTING TRIALS

SYDNEY METRO PLANTING TRIAL

Hassell



Sydney Metro
sydneymetro.info



FAILED MONOCULTURE - 2019



INCREASED DIVERSITY AND DENSITY - 2022

SYDNEY METRO PLANTING TRIAL



SYDNEY METRO PLANTING TRIAL

Acacia ligulata (sub A redolens)
Actinotus helianthii
Actinotus minor
Ajuga reptans 'Caitlins Giant' (sub Ajuga australis)
Alpinia caerulea
Alyogyne cv.
Alyogyne huegelii (Dwarf form)
Alyogyne huegelii X hakeifolia 'Natalie Anne'
Anigozanthus 'Bush Ranger'
Arthropodium milleflorum
Arthropodium stricta
Astartea fascicularis (extra stock)
Austromyrtus 'Copper Tops'
Austromyrtus dulcis
Austrostipa flavescens (sub A.elegantissima)
Austrostipa pubinodis (sub A. scabra)
Austrostipa scabra (sub A bigeniculata)
Austrostipa stipoides
Baeckea imbricata
Bauera rubioides
Blechnum gibbum 'Silver Lady' (sub B. nudum)
Boronia 'Carousel' (was B. serrulata)
Brachyscome multifida 'Break o Day' (sub B. multifida + others)
Bulbine bulbosa (+ sub B. semibarbata)
Callistemon citrinus 'Endeavour' (sub Splendens)
Callistemon viminalis 'Little John'
Calocephalus citreus
Calocephalus lacteus (sub for Actinotus helianthii + Hel. Rutidolepis)
Calotis lappulacea
Calytrix tetragona
Carpobrotus sp
Chrysocephalum apiculatum
Chrysocephalum semipapposum
Conostylis 'Silver Sunrise'
Cordyline rubra
Correa 'Dusky Bells'
Correa alba
Correa decumbens
Correa reflexa (+ sub C. baeurerlenii)
Crowea exalata
Crowea 'Poorinda Ecstasy' (sub C. saligna)
Dampiera diversifolia (sub D stricta, D. rosmarinifolia)
Darwinia citriodora

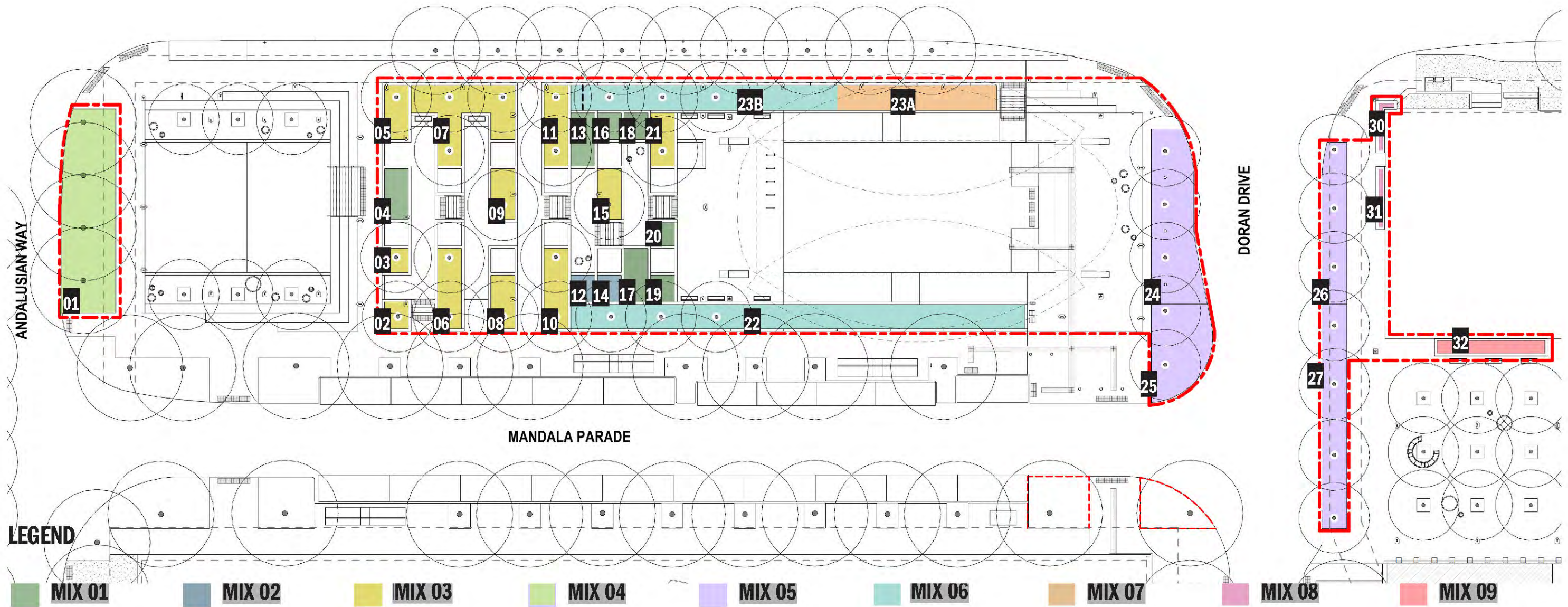
Dichelachne micrantha
Dichondra repens
Dillwynia sericea (sub Platylodium obtusangulum)
Eryngium ovinum
Eryngium x zabellii 'Violetta' (sub E. bourgatii)
Eutaxia obovata (sub Platylodium formosum)
Gastrolobium celsianum
Geranium homeanum (+ extra stock)
Goodenia ovata (Prostrate form)
Grevillea 'Compact Form' (sub G. endlicheriana)
Grevillea endlicheriana
Grevillea 'John Evans' (sub G. baueri)
Grevillea lanigera (extra stock)
Grevillea lanigera (sub for 'Mini Prostrate')
Grevillea 'Molonglo'
Grevillea preissii 'Grey leaf'
Grevillea sericea
Hibbertia aspera (extra stock)
Hibbertia scandens
Hibiscus 'Aussie delight'
Hymenospermum flavum 'Lushious' or 'Gold Nugget'
Indigofera australis
Kniphofia cv. (smaller hybrid cv)
Kunzea ambigua prostrate
Kunzea 'Badgers Carpet' (extra stock)
Leptospermum myrsinoides (+ sub L. Cardwell)
Leptospermum polygalifolium
Libertia paniculata
Lomandra 'Lime Tuff' (+ sub L. filiformis)
Lomandra 'Tanika' (+ sub L. multiflora)
Melaleuca decussata (+ sub M. nesophila 'Little Nessie')
Melaleuca hypericifolia 'Ulladulla Beacon'
Melaleuca incana
Melaleuca thymifolia (+ sub M. decussata)
Molineria capitulata
Myoporium ellipticum (extra stock)
Orthrosanthus polystachyus
Ozothamnus diosmifolius 'Petite'
Panicum simile
Paterсонia occidentalis (+ sub P.glabrata)
Pelargonium australe (+ sub Geranium potentoides)
Phebalium squamulosum (sub Leonema lamprophyllum)
Philotheca myoporoides 'Profusion'
Pimelea spicata (sub P. ferruginea)

Pimelea spicata (sub P. ferruginea)
Pimelea spicata (was Trachymene incisa)
Plectranthus parviflorus (sub P. p 'Blue Spires')
Poa labillardieri
Poa sieberiana
Pratia pedunculata (+ sub for Tripladenia cunninghamii)
Pratia purpurascens
Prostanthera sieberi 'Minty'
Pycnosorus globosus
Rulingia hermannifolia (extra stock)
Rulingia hermannifolia (sub Baeckea linifolia)
Scaevola calendulacea
Scaevola 'Mauve Clusters'
Tetragonia tetragonioides (extra stock)
Thryptomene saxicola
Veronica perfoliata alba (sub Veronica arenaria)
Viola hederacea
Wahlenbergia stricta (+ sub Thysanotus multiflorus)
Westringia 'Smokie' (extra stock)
Zieria smithii

100+ SPECIES
8,000 PLANTS

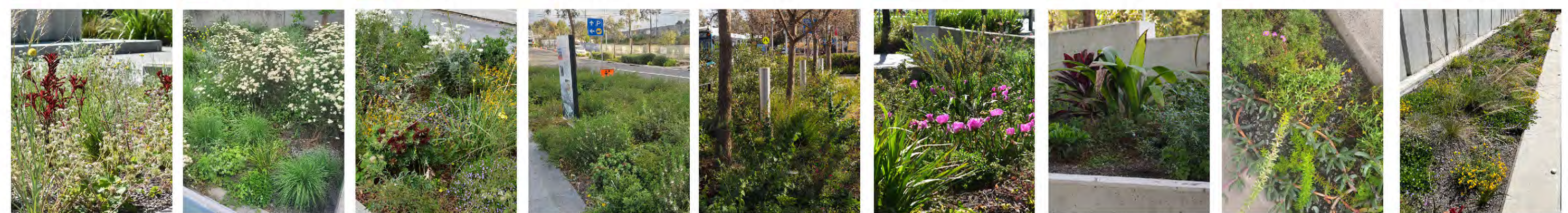
SYDNEY METRO PLANTING TRIAL

CARRINGTON ROAD



LEGEND

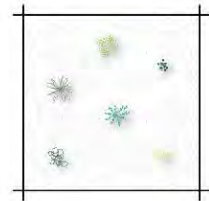
- MIX 01
- MIX 02
- MIX 03
- MIX 04
- MIX 05
- MIX 06
- MIX 07
- MIX 08
- MIX 09



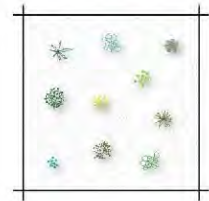
SYDNEY METRO PLANTING TRIAL

Densities

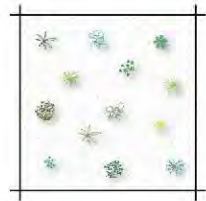
Implementing a variety of densities intended to test the success of species growing in close proximity together, and the impact of planting density on time to achieve a full ground cover.



6 plants per m²



10 plants per m²



13 plants per m²

Pot sizes

Pot sizes were varied due to available market supply, ranging from 50mm tubes to 200mm pots. This created an opportunity to measure the longer term success and growth of each.



200mm



150mm



140mm



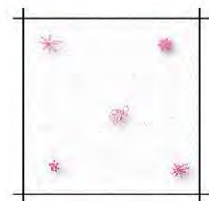
75mm



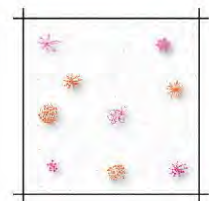
50mm

Set-out

Set-out included separating each species into their respective layers and using a 'randomised' arrangement. This was done manually on site by Sydney Metro, Hassell & UOM team.



Randomly set-out base layer species



Randomly set-out middle layer species



Randomly set-out upper layer species

Layers

Adapted from methods of the Woody Meadow Project, the planting mimics the structure of natural shrub ecosystems with three layers; base, middle and upper.



Base
(0-200mm)

Middle
(200-400mm)

Upper
(400-800mm)



SYDNEY METRO PLANTING TRIAL



Image: Jon Hazelwood

6 MONTHS



Bed 1



Bed 2



Bed 3



Bed 16



Bed 17



Bed 18



Bed 4



Bed 5



Bed 6



Bed 19



Bed 20



Bed 21



Bed 7



Bed 8



Bed 9



Bed 22



Bed 23A



Bed 23B



Bed 10



Bed 11



Bed 12



Bed 24+25



Bed 26+27



Bed 30+31



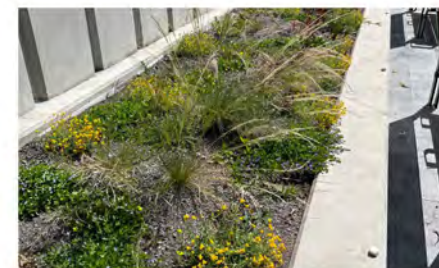
Bed 13



Bed 14



Bed 15



Bed 32

14 MONTHS



Bed 1



Bed 2



Bed 3



Bed 16



Bed 17



Bed 18



Bed 4



Bed 5



Bed 6



Bed 19



Bed 20



Bed 21



Bed 7



Bed 8



Bed 9



Bed 22



Bed 23A



Bed 23B



Bed 10



Bed 11



Bed 12



Bed 24+25



Bed 26+27



Bed 30+31



Bed 13



Bed 14



Bed 15



Bed 32



Austrostipa elegantissima, 12 Months, 2023



Bulbine Bulbosa, 12 Months, 2023



Brachyscome multifida, 12 Months, 2023



Bed 9 September, 2023



P. myoporoides 'Profusion', 12 Months, 2023



Actinotus hellianthi, 12 Months, 2023



Isopogon cuneatus, 12 Months, 2023



August, 2022

SYDNEY METRO PLANTING TRIAL



Image: Jon Hazelwood

SYDNEY METRO PLANTING TRIAL



Image: Jon Hazelwood

SYDNEY METRO PLANTING TRIAL



SYDNEY METRO PLANTING TRIAL

10

Minimum 10 plants per square metre

Substituting non-natives can aid in filling in the gaps of the year when natives are not flowering. This will ensure nectar and pollen resources are available for insects and birds all year round.



Tussock grasses should only be planted at 1 plant per square metre.

Installation & establishment:

Good specifications for plant establishment are essential, particularly planting methods and establishment irrigation. Larger containerised stock have greater irrigation needs post planting, a factor that may influence plant survival and growth.

75mm 50mm



In most instances, 75mm tubes performed as well as larger pots, with grasses particularly well suited.

Species such as *Viola*, *Chrysocephalum*, *Brachyscome*, *Actinotus*, *Coronidium* may establish well through direct seeding.

Plant Procurement

1. A pre-grow contract would be the ideal method of ensuring plant species are available.
2. Build relationships with local suppliers.
3. Use online resources where available to find rare species.

On-going care:

1 Plant removals and pruning of herbaceous plants:

Selected removal or pruning of aggressive and overly dominant plants (grasses, perennials). This includes selective plant removal and clearing of dead biomass from beds to reduce densities (e.g. *Poa labillardieri*, *Geranium homeanum*). Some vigorous pruning is also needed to reduce the canopy of some plants where their lateral spread is excessive (e.g. *Scaevola 'Mauve Clusters'*).

Estimated frequency: Biannually

2

Weeding and mulching

Undertake weeding being careful to retain some recruited seedlings (after correct identification). At planting the addition of 5 cm layer of mineral mulch (ideally using a ~5 mm aggregate) is likely to reduce weeds.

Est. frequency: Quarterly

3

Coppicing

All shrubs should be pruned to a height of 12cm above the ground in early spring and all plant material moved from the site.

Est. frequency: Annually

4

Replantings

Some beds or areas will require supplementary, infill or replacement planting following observations over the growing season.

5

Fertiliser

Top up fertiliser may be required in areas as necessary.

Est. frequency: As necessary

Care is needed in designing plant mixes that balance plant types and growth rates.

Avoiding or reducing the number of overly vigorous plants in mixes, such as some of the grasses, sedges and perennial herbs, needs to be balanced against longer-lived and often slower growing plants in mixes, such as the woody plants. This is of particular importance in smaller beds with limited soil volumes. Plus consideration of soil properties, in particular fertility and drainage, as well as sufficient plant coverage to achieve weed suppression.

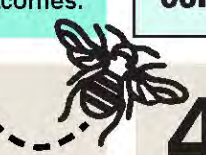
Considerations of the microclimate and site conditions during the design is essential for planting success.

Future Planting Trials:

Establish and plan a clear process for monitoring and documenting changes in plant growth. Conducting invertebrate and fauna surveys prior to planting can also assist in measuring biodiversity outcomes.

The mixed aesthetic and functional outcomes in this project suggests that greater analysis of plant phenology is needed in developing future mixes. This includes growth traits that provide flowering and foliage interest, as well as developing vertical layers to provide structure, and ground coverage to assist in weed reduction.

Installation of both planting and seeding should aim to occur in September or May to allow plants the best chance to establish in optimal growing conditions.





THANK YOU

CAMDEN'S GREEN AND BLUE GRID VISION



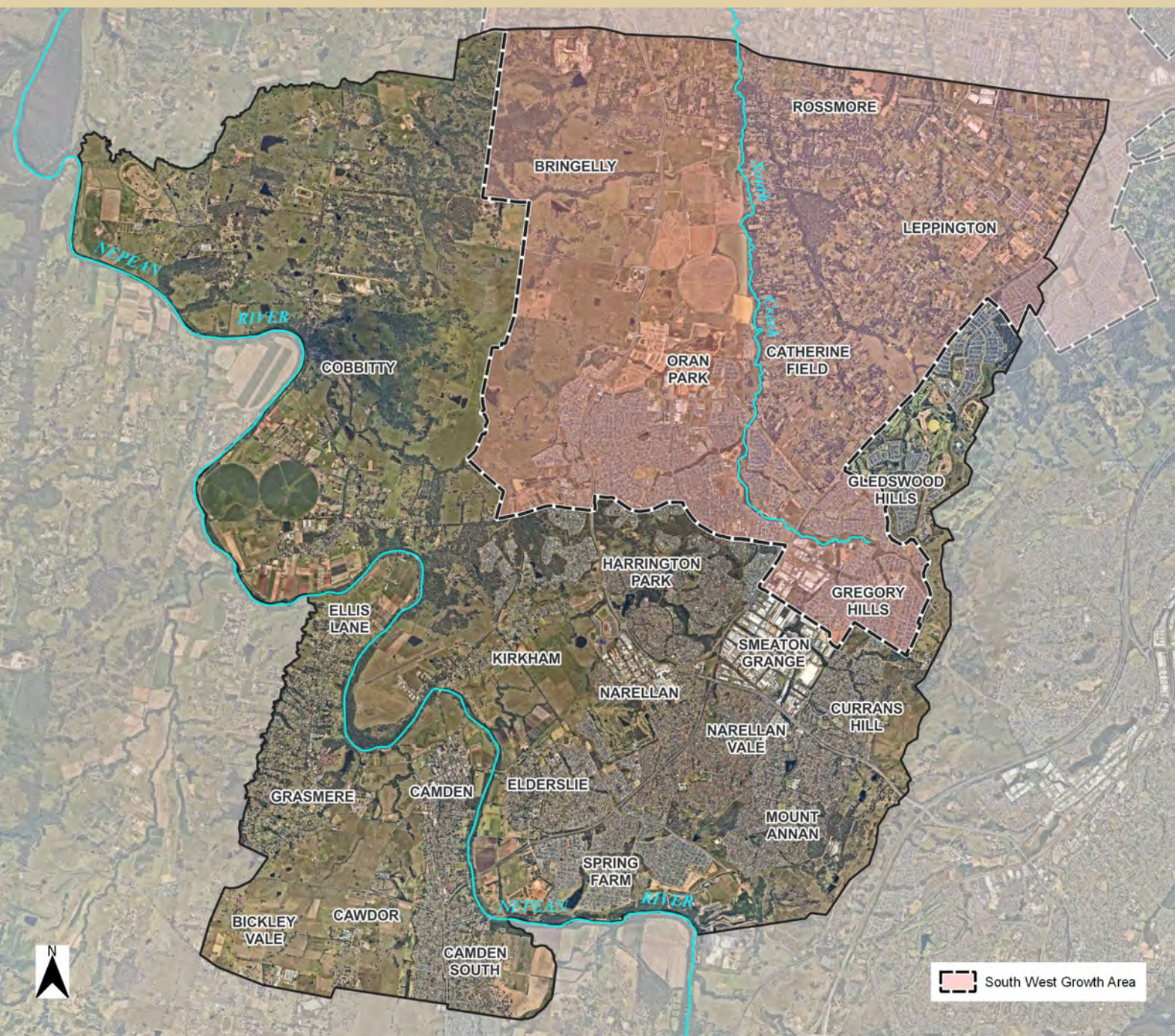
*Cut Hill Reserve, Cobbitty
Photo credit: Murray Wilson*

ACKNOWLEDGEMENT OF COUNTRY



*Artwork Title: "Bulawiri Nura – Three Country's"
Artist: Melissa Barton*

ABOUT CAMDEN LOCAL GOVERNMENT AREA



205 square kilometres

Total land area



One of the fastest growing LGAs in Australia



135,000 population

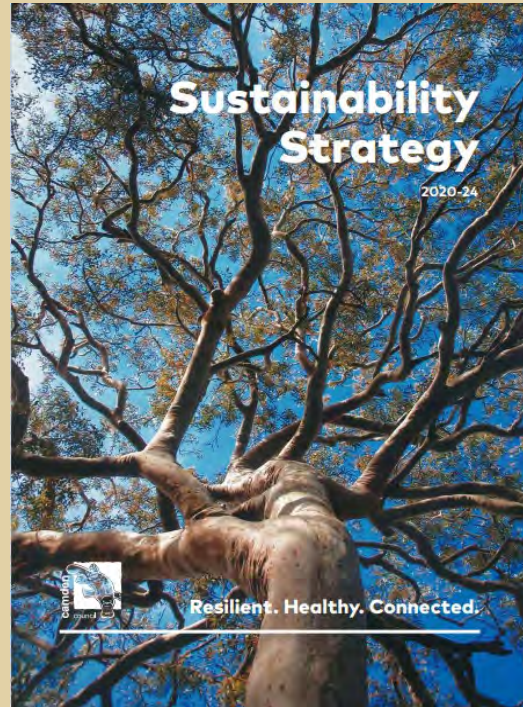
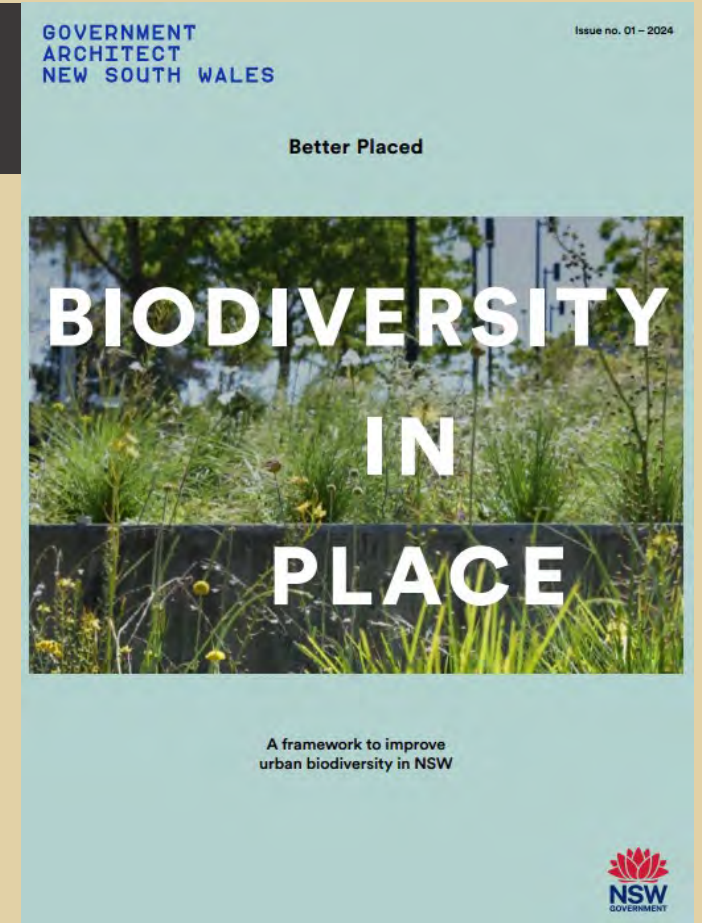
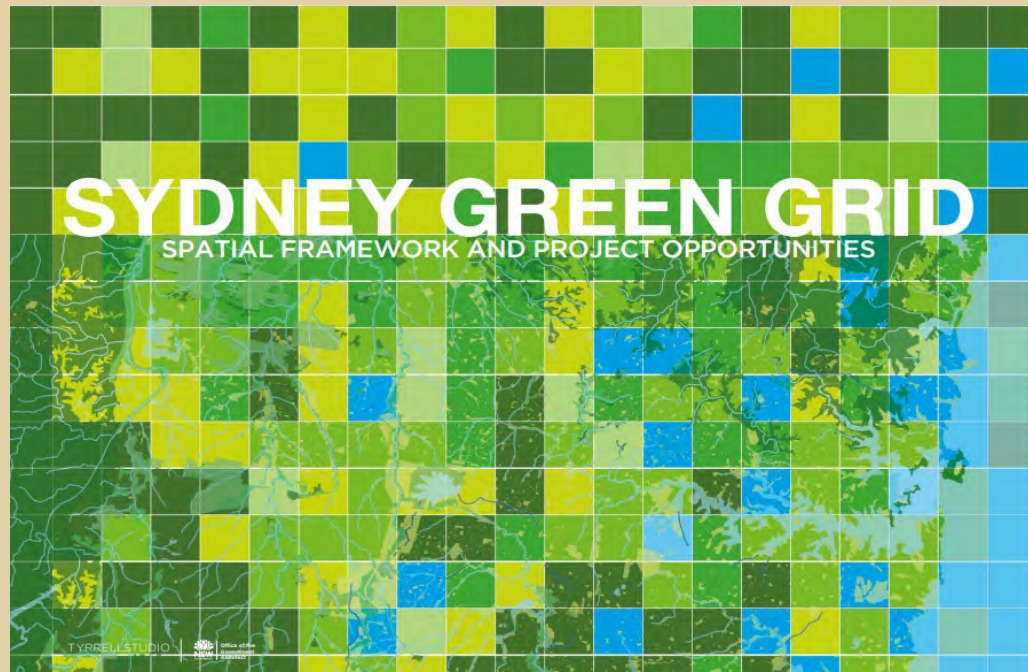
240,000 by 2041



2 key waterways

Nepean River and Wianamatta South Creek

THE POLICY CONTEXT



MULTISCALE APPROACH

LGA-scale

Suburb-scale

Project-scale

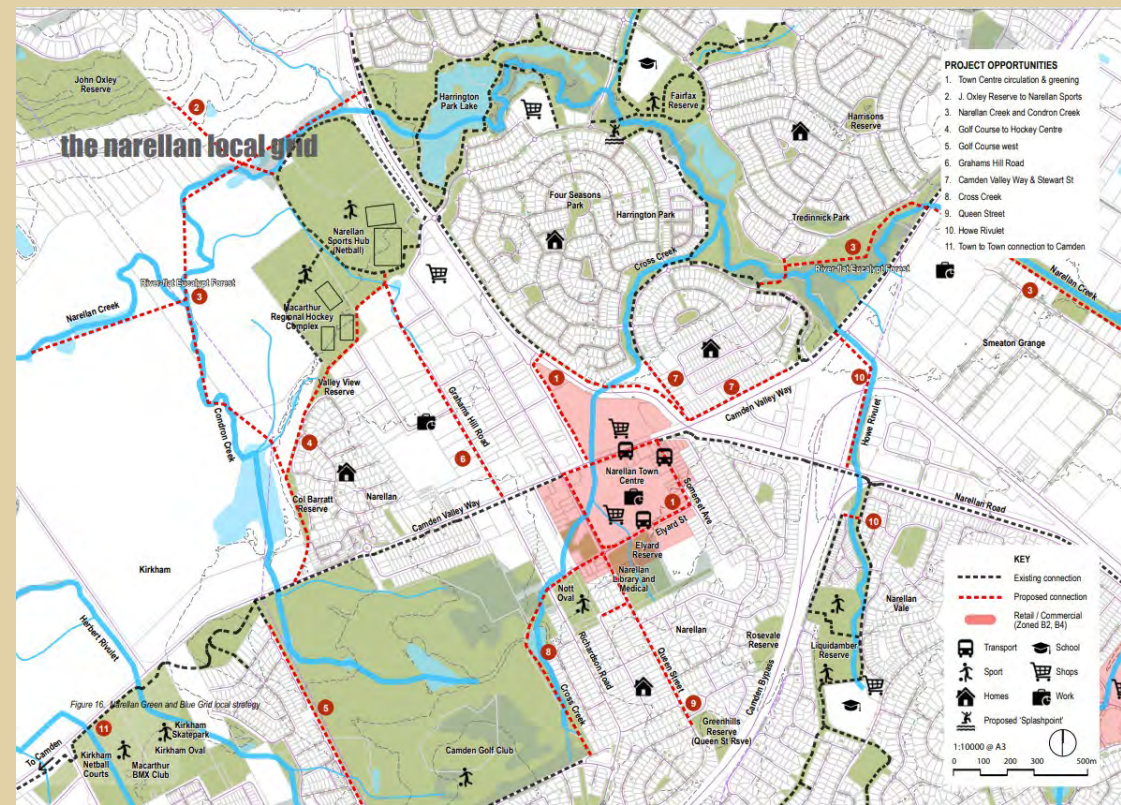
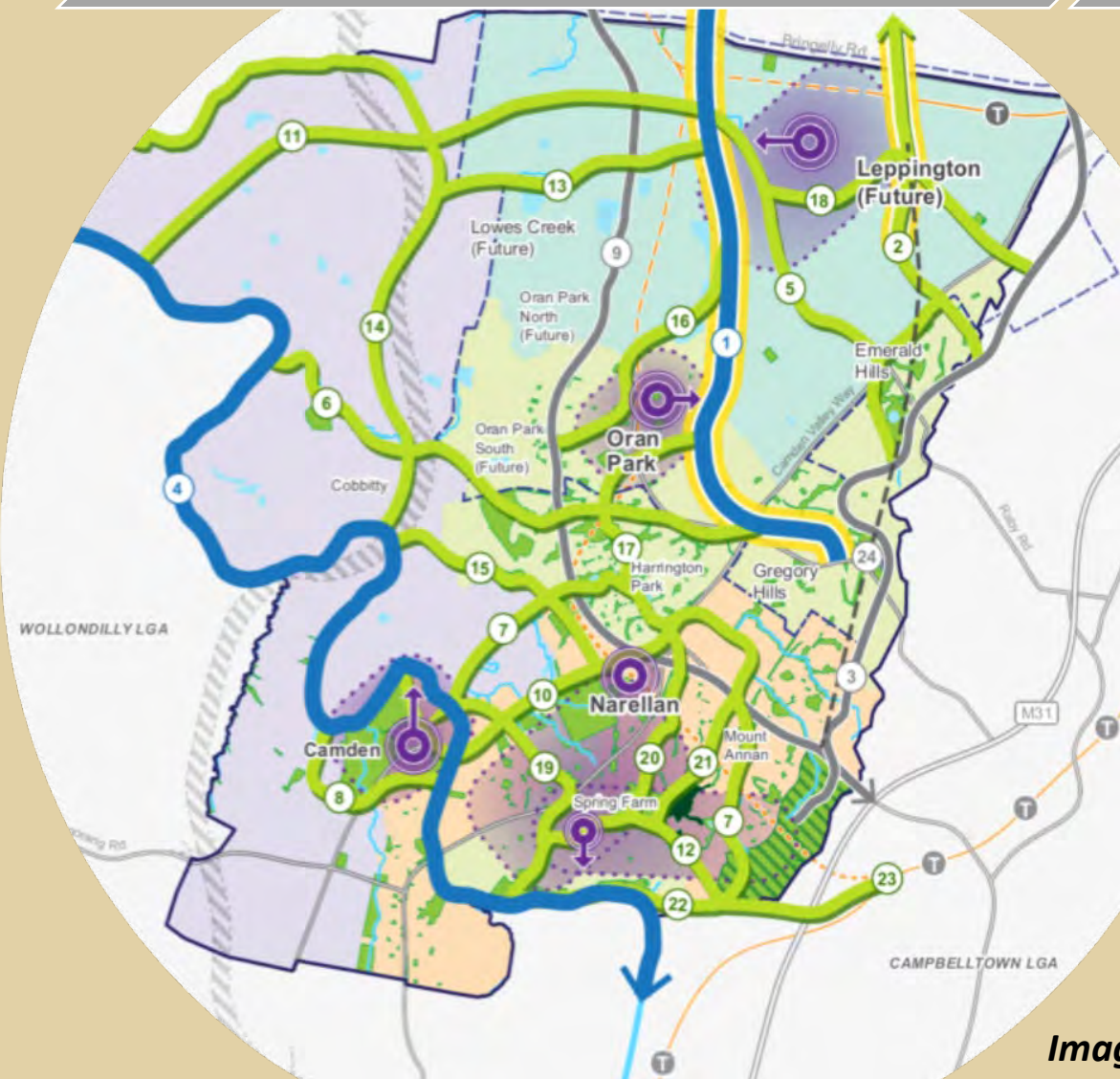


Image sources: Camden Green and Blue Grid Analysis (Clouston Associates), Camden Green and Blue Grid Vision (Camden Council)

IMPLEMENTATION FRAMEWORK



Collaborate internally across teams



Align local strategies and plans



Secure external funding



Establish State agency and community partnerships



Focus on quick wins to build momentum

BIODIVERSITY AND PLACE OUTCOMES ACHIEVED SO FAR

300m

Nepean riverbank restored*

**includes reintroduction of river snags through 9 hardwood fish habitat, and erosion control structures*

240,000m²

woody weeds removed

56,000

endemic plants added

135

Critically endangered
Camden White Gums
planted & monitored

5.4km

of new paths to Nepean
River

Viewing platforms to Nepean
River and over Kirkham
floodplain

From Policy to Practice

FERGUSONS LAND NEPEAN RIVERBANK RESTORATION – RIPARIAN LAND

- Sydney Water partnership as part of a nutrient offset trial
- Restoration of 200m of degraded riverbank
- Reuse of waste materials in 8 engineered logjams
- 10,000m² of woody weed removal and revegetation with 27,500 River-flat Eucalypt Forest plants



Photo: Nepean River riverbank at Fergusons Land, Camden

Photo credit: Camden Council



JOHN OXLEY RESERVE TRAIL – RESERVES

- Successful Greening Australia partnership for restoration with 23,000 native species planted
- Identified as a priority green connection in the Green and Blue Grid Vision
- Places to Roam grant for pathways, signage, lookouts and public art to activate the site



*Photos: John Oxley Reserve, Kirkham
Photo credit: Camden Council*



MICRO PROJECTS – ROADS, STREETS AND LANEWAYS, RESERVES & POCKET PARKS

- Trialled the use of direct seeding of native meadow species
- Suitable for roundabouts, verges and other small and overlooked spaces
- Biodiversity outcomes with maintenance benefits

Photo: Wildflowers at Cowper Reserve, Camden South

Photo credit: Camden Council



NEPEAN RIVER RECREATIONAL TRAIL – RIPARIAN CORRIDOR & REGIONAL PARK

- Public Spaces Legacy Program grant
- Planted new trees, accessible pathways 23,000 new plants, viewing platforms, artwork and riverbank restoration works
- Rewilding Sydney - Partnership with Greening Australia

*Photos: Nepean River
Recreational Trail, Camden*

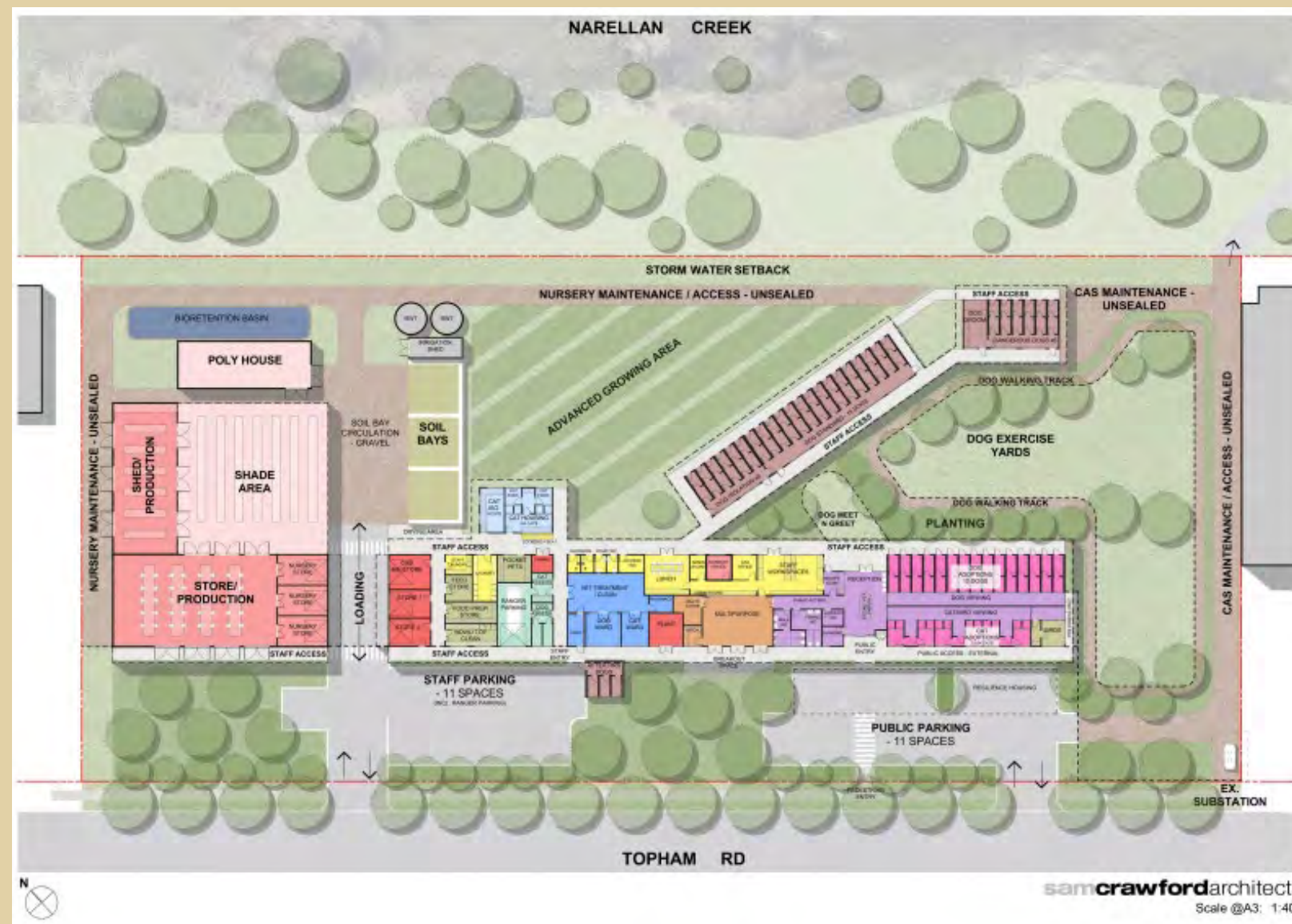
*Photo credit: Top and bottom
left: Brett Atkins, Right:
Camden Council*



PROJECTS IN THE PIPELINE



*Image: Nepean River, Camden
Photo credit: Brett Atkins*



*Image: Camden Nursery Concept Design
Source: Camden Council
Credit: Sam Crawford Architects*

CONTACT US – E: sustainability@camden.nsw.gov.au



Photo: William Howe Regional Park, Mount Annan. Photo credit: Camden Council

COBDEN ST
113 - 153

← ONE WAY







Bank St nature strip before...

Moonscape
Nothing
Barren
Degraded
Invisible



Bank St nature strip After!

Heartscape
Something
Movement
Regenerating
Engaging





The BEE Gardens



Moray St



St Martins



Bank St



Bank St

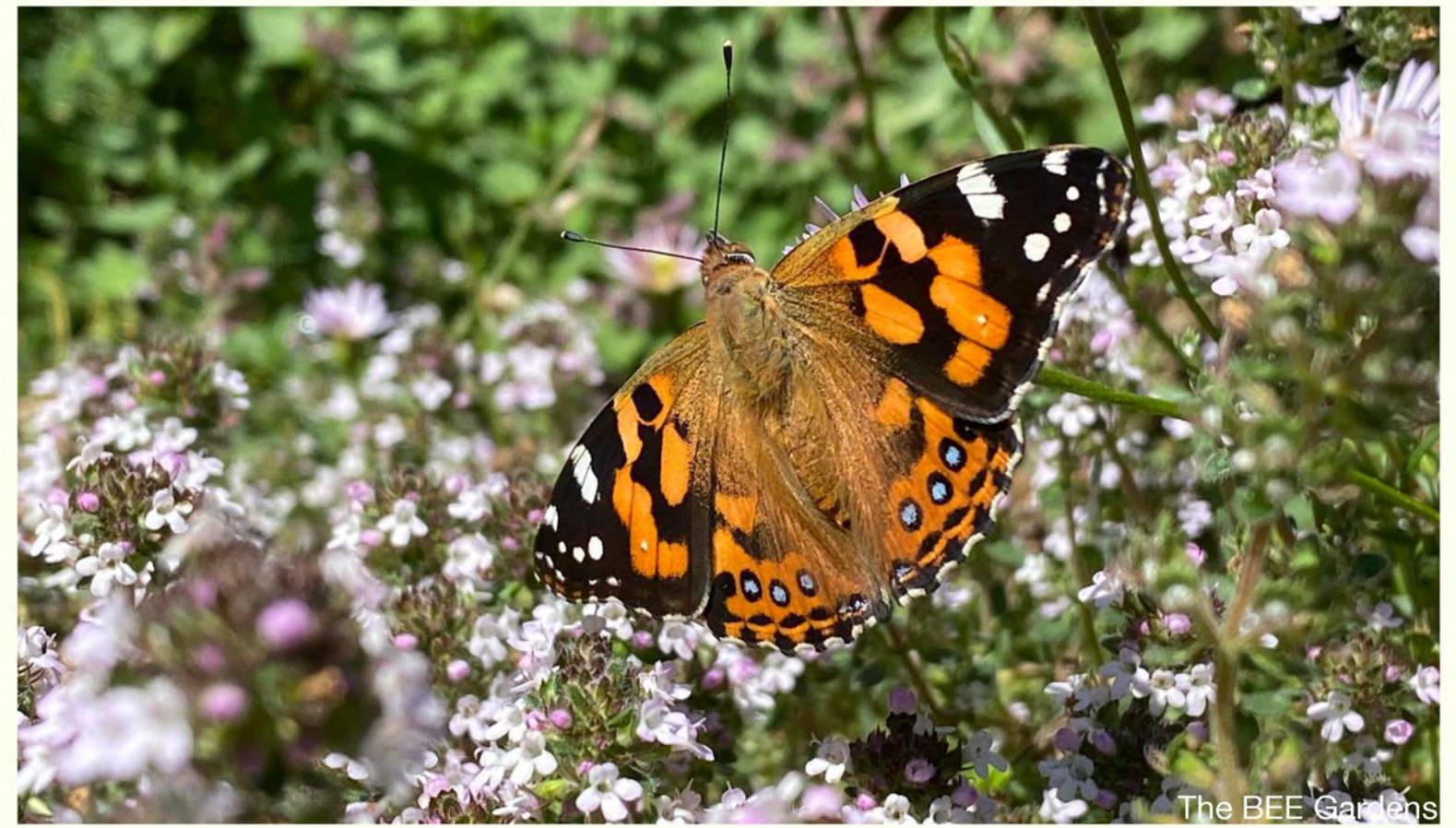


St Martins





101 Cobden



The BEE Gardens



101 Cobden



101 Cobden





101 Cobden



The BEE Gardens



St Martins

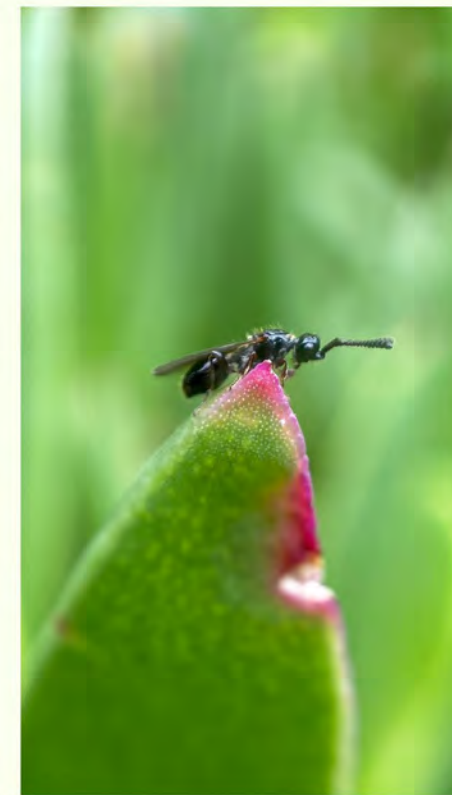
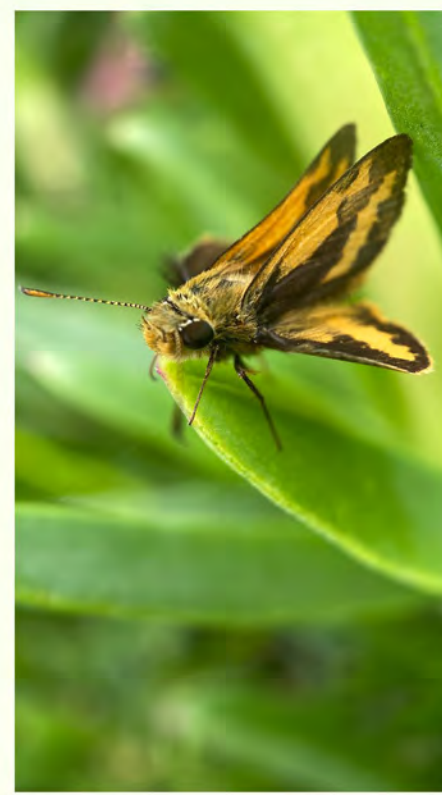
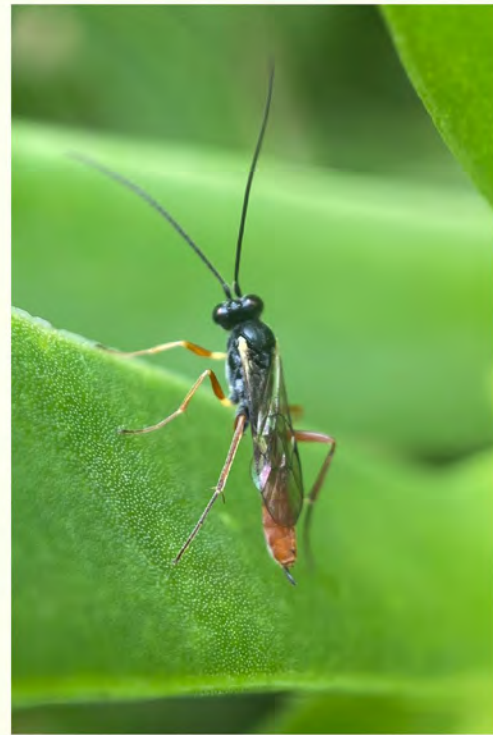
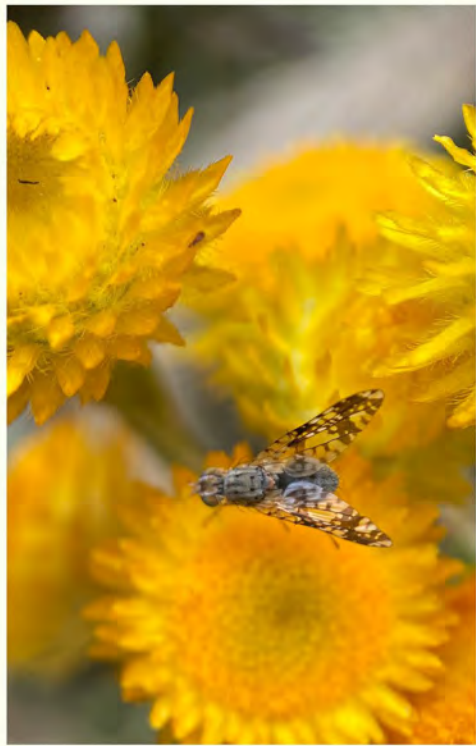


St Martins











“Thank you so much for your **care.**”

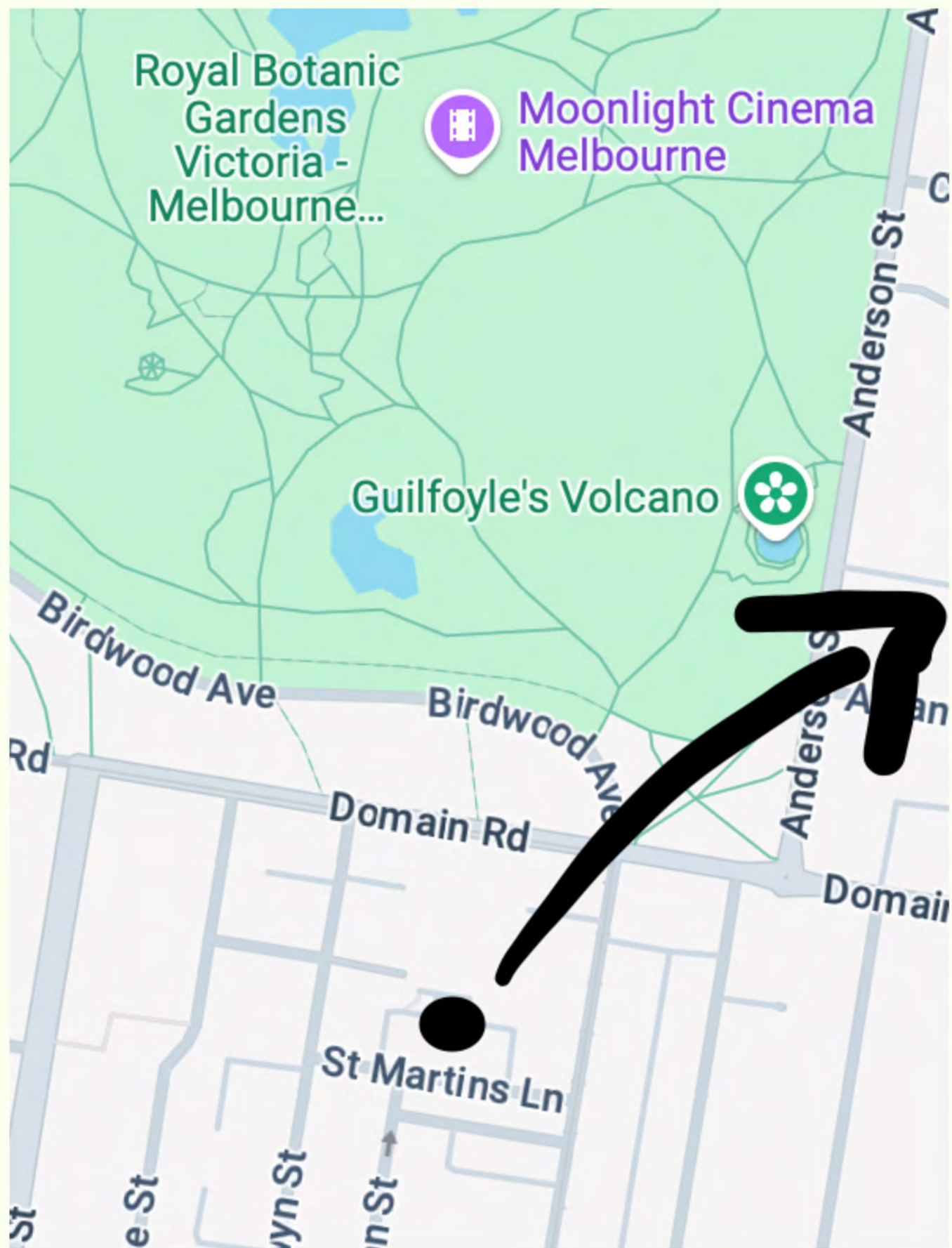
“The gardens are quite overgrown- there are lots of butterflies in there.”

“**What are you doing?**” - child

“I’ve been cleaning up the rubbish in there...would you like some parsley?”

“**Are you ok?**” (a volunteer was kneeling in the garden)

“This is the most **exciting** thing to happen in this space.”















Thank you!

www.heartscapes.org.au

**GOVERNMENT
ARCHITECT
NEW SOUTH WALES**

