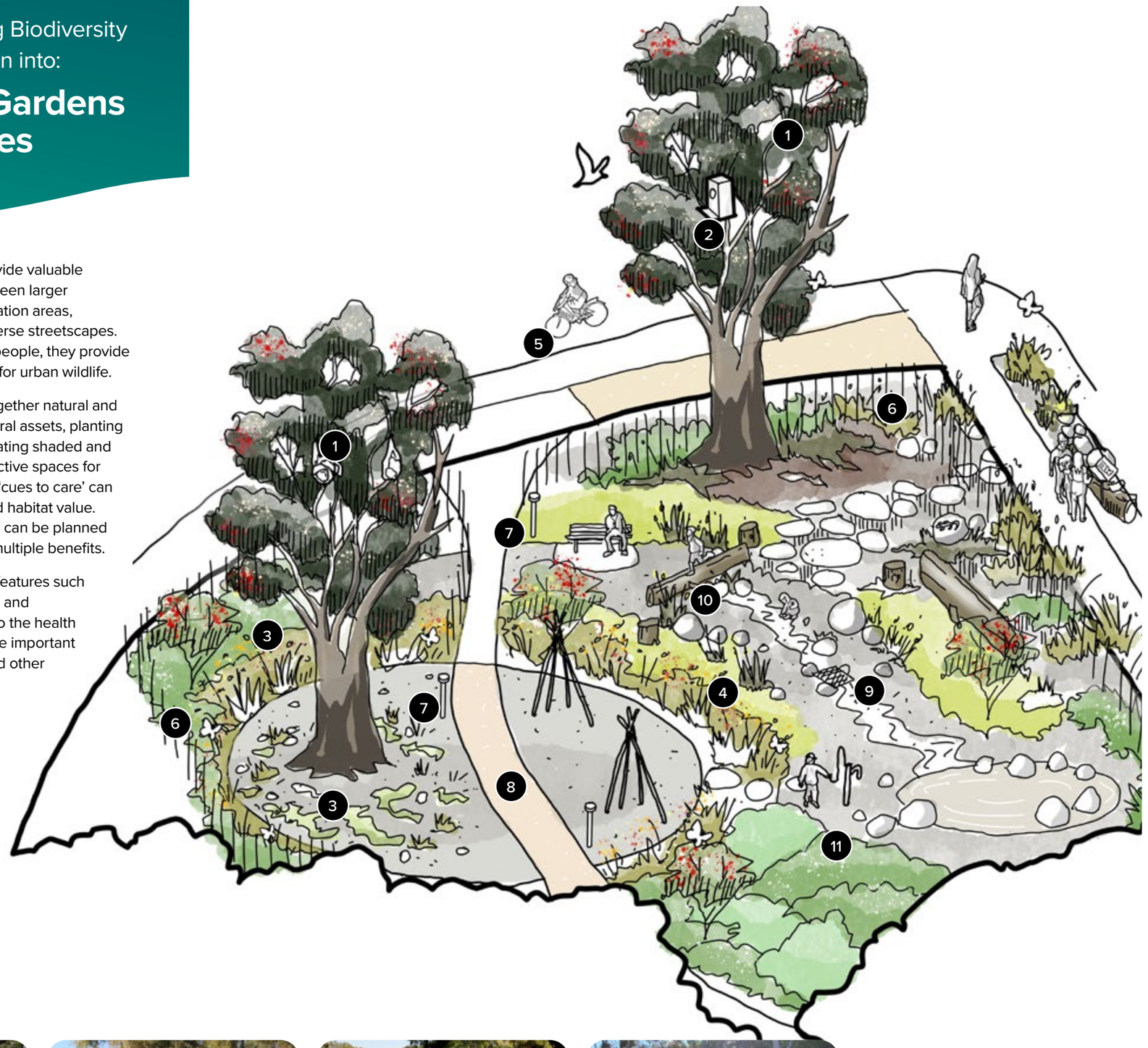
Ideas for incorporating Biodiversity Sensitive Urban Design into:

Local Parks, Gardens and Playspaces

Local parks and gardens can provide valuable habitat and stepping stones between larger parklands, corridors and conservation areas, particularly linked through biodiverse streetscapes. As well as providing amenity for people, they provide important refuges and resources for urban wildlife.

Parks and gardens often bring together natural and novel ecosystems. Retaining natural assets, planting native trees and shrubs, incorporating shaded and protected places, designing attractive spaces for community enjoyment and using 'cues to care' can enhance both human comfort and habitat value. Shared pathways and playspaces can be planned to minimise impacts and deliver multiple benefits.

Water sensitive design including features such as raingardens, vegetated swales and permeable pathways contribute to the health of soil and vegetation, and provide important water resources for butterflies and other beneficial insects.



Ideas and techniques for integrating BSUD

1	Retain **natural features,** particularly remnant and mature trees, to preserve long-term habitat structure, and provide continuity for local fauna.	Maintain & Create Habitat
2	Include **artificial habitat** features, such as **nest boxes**, to support target fauna where natural hollows are limited.	
3	Retrofit **understorey planting** beneath or around remnant trees using species tolerant of shade and root zone competition.	
4	Include **pollinator gardens** for visual appeal while showcasing how planting supports bees, butterflies and other pollinating species.	Facilitate Dispersal
5	Position **active travel** and **shared pathways** to maintain sufficient buffers from sensitive habitat and reduce disturbance to fauna.	Minimise Threats
6	Provide **discrete open fencing** and/or **delineate planting edges** to protect establishing or sensitive vegetation, and to signal intentional management and cues to care.	
7	Ensure **lighting is sensitive to wildlife** - low intensity, warm in colour, targeted and controlled to avoid unnecessary illumination.	
8	Incorporate **permeable ground treatments** to promote infiltration, reduce surface runoff and support soil and vegetation health. verandas with planter boxes	Facilitate Natural Processes
9	Incorporate **WSUD** features such as rain gardens to enhance stormwater management, water quality and community and recreational amenity.	
10	Integrate **nature play** elements including logs, boulders and water features to provide multi-benefits for fauna habitat and human interaction.	Human Interactions
11	Consider planting of **edible and medicinal native plants.**	

Nest Box, City of Unley. Source: Umwelt

Understorey planting, Oaklands Park, by T.C.L. Photography by Sam Noonan

Delineated planting edges provide cues to care, Oaklands Park, by T.C.L. Photography by Sam Noonan

Co created cultural landscape garden, with edible and medicinal species, South Everleigh. Source: Jiwah

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Ideas for incorporating Biodiversity Sensitive Urban Design into:

Streets and Verges

While streets and verges have considerable potential, they are often under-utilised spaces for biodiversity. They can function as valuable green corridors, supporting diverse habitats and linking fragmented ecosystems across the urban landscape.

As a significant portion of public land, local streetscapes present a key opportunity to integrate nature into the urban environment. Challenges such as managing water flow and quality, and the need to maintain transport sightlines and public safety, can be effectively addressed through thoughtful design.

During planning and design stages, consider road hierarchy and road and verge design to facilitate desired BSUD outcomes. This may include identification of 'greenways' and other transport corridors that link with green spaces throughout the project area. Consider road, verge and footpath widths, identify locations for on-street parking, and plan for the integration of water sensitive urban design features. Coordinate infrastructure and utility planning and installation to maximise the space available in street verges for tree planting, verge gardens and stormwater infiltration and to minimise potential conflicts.

Street and verge design may also present opportunities to integrate fauna crossings for target species.

Ideas and techniques for integrating BSUD

Maintain & Create Habitat

1. Preserve and introduce **native trees suitable for streetscapes.**
2. Introduce **understorey and groundcover planting** to add **strata complexity.**
3. Include **artificial habitat** features, such as **nest boxes**, to support target fauna where natural hollows are limited.

Facilitate Dispersal

4. Plan for **corridor planting** by reallocating hard surfaces, such as through pavement cut-outs, and limiting on-street parking and driveway crossovers.
5. Provide **wildlife crossing structures** including ladder crosses to mitigate transport barriers and promote ecological connectivity. and wildlife collisions and improve fauna safety.

Minimise Threats

6. Implement **traffic calming** measures such as reduced speed zones, raised thresholds, and one way streets, and visual narrowing to minimise vehicle
7. Ensure **lighting is sensitive to wildlife** - low intensity, warm in colour, targeted and controlled to avoid unnecessary illumination.

Facilitate Natural Processes

8. Incorporate **WSUD** features including kerb inlets, rain gardens, and bioswales into the streetscape, to capture and filter stormwater and provide habitat.
9. Incorporate **tree pits or tree trenches** with passive irrigation to provide adequate soil volume, aeration, and drainage for healthy tree establishment and long term growth.
10. Incorporate **permeable pavements** to promote infiltration, reduce surface runoff and support soil and vegetation health.

Human Interactions

11. Integrate **interpretive signage** for nature education and/or **citizen science** opportunities.

St Peters Streetscape.
Photography by Duncan McKenzie

Verge Garden, Lochiel Park. Source: Green Adelaide

Retrofit for corridor planting, St Peters Streetscape. Source: Sweet Lime, photography by Duncan McKenzie

Windsor Street, City of Unley. Source: Umwelt

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Ideas for incorporating Biodiversity Sensitive Urban Design into:

Public Plazas and Squares

Public plazas and squares are traditionally dominated by expansive hardstand and often constrained by services and podium structures. However, there are often opportunities to introduce vegetation such as using mobile planter boxes for trees and wildflower or pollinator gardens.

Minimising hard impermeable surfaces and integrating vegetation using bio-retention systems and deep soil zones for trees can significantly improve public amenity as well as provide habitat and wildlife resources.

Transitioning these public spaces way from monoculture treatments and encouraging natural processes allows plazas and squares to mitigate climate impacts, improve microclimates and contribute to a civic identity that reflects local landscape character and ecology.

Ideas and techniques for integrating BSUD

Maintain & Create Habitat

1. Retain **natural features,** particularly remnant and mature trees, to preserve long-term habitat structure, and provide continuity for local fauna.
2. Include **artificial habitat** features, such as nesting boxes, to support target fauna where natural hollows are limited.
3. Incorporate **seasonal floral and feature planting** that highlights flowering species from the local vegetation community.
4. Reduce **hardstand areas** where practicable, and incorporate **raised beds and planter boxes within existing podium areas. Green roofs** and **living walls** can improve microclimates, and support site biodiversity.

Facilitate Dispersal

5. Include **pollinator gardens** for visual appeal while showcasing how planting supports bees, butterflies and other pollinating species.

Minimise Threats

6. Ensure **lighting is sensitive to wildlife** - low intensity, warm in colour, targeted and controlled to avoid unnecessary illumination.
7. Incorporate **WSUD** features to car parks to enhance stormwater management, and water quality.

Facilitate Natural Processes

8. Incorporate **permeable ground treatments** to promote infiltration, reduce surface runoff and support soil and vegetation health.
9. Implement **trial areas of planting mixes and maintenance regimes** that minimise pesticide use and promote biodiversity. Monitor performance for ongoing success.
10. Incorporate **deep soil zones** or new trees and **protection zones** for existing trees.

Human Interactions

11. Integrate **nature play** elements including rocks and logs to provide multi-benefits for fauna habitat and human interaction.
12. Integrate **interpretive signage or art** for biodiversity education and/ or **citizen science** opportunities.

Yam Daisy Roof Garden, Sydney Modern by McGregor Coxall. Photography by Brett Boardman

WSUD features, Mitcham Library by Aspect Studio. Photography by Dan Schultz

Sydney Metro Planting Trial, by Hassell. Source: Hassell

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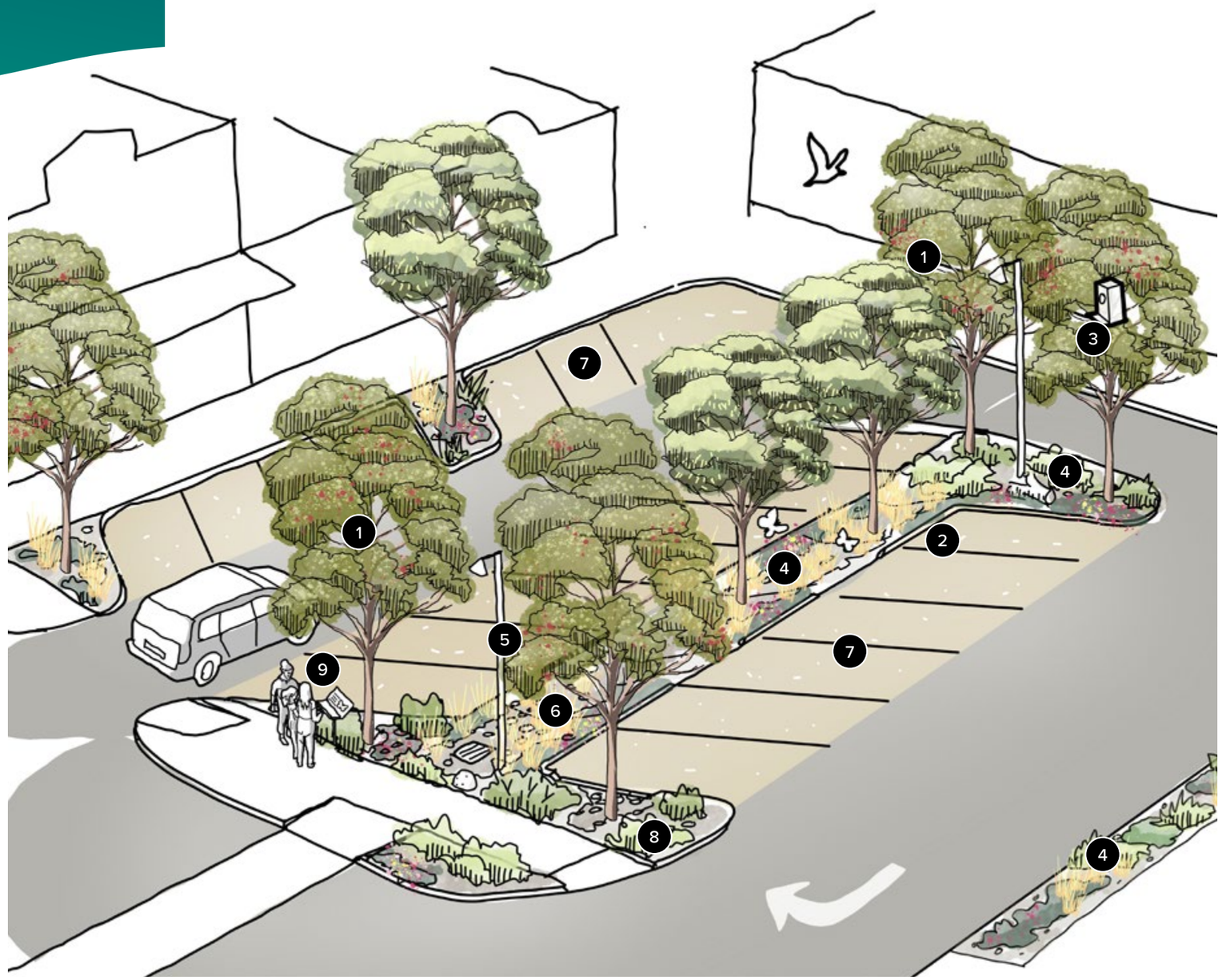
Ideas for incorporating Biodiversity Sensitive Urban Design into:

Car Parks

Car parks often occupy considerable areas of impermeable surfaces creating hot, inhospitable conditions for people and for wildlife. Biodiversity outcomes can be significantly strengthened by increasing tree canopy cover and understorey vegetation, and by incorporating permeable surfaces to allow water infiltration and reduce urban heat island effects.

During design stages, maximise opportunities for tree plantings to provide shade and cooling, ensure adequate protection zones around existing trees, provide deep soil zones for new trees, and provide safe and accessible pedestrian connections including shaded pathways. Shaded and vegetated pathways and accessways provide additional wildlife habitat as well as protection for infrastructure.



Ideas and techniques for integrating BSUD

1	Preserve and introduce **native trees,** suitable for car parks.	Maintain & Create Habitat
2	Introduce **understorey and groundcover planting** to add strata complexity.	
3	Include appropriate **artificial habitat and resource features,** such as **bird nest boxes** and **elevated bird waterers**, to support target fauna.	Facilitate Dispersal
4	Integrate **pollinator gardens and flowering species** to support native bees, butterflies and other pollinating species.	
5	Ensure **lighting is sensitive to wildlife** - low intensity, warm in colour, targeted and controlled to avoid unnecessary illumination.	
6	Incorporate **WSUD** features including rain gardens, and bioswales between rows to filter stormwater and provide habitat.	Minimise Threats
7	Incorporate **permeable ground treatments** to promote infiltration, reduce surface runoff and support soil and vegetation health.	
8	Use **kerb inlets** to capture and convey stormwater into tree pits and garden beds, enhancing soil moisture, and vegetation health.	Facilitate Natural Processes
9	Integrate **interpretive signage** for biodiversity education and/or **citizen science** opportunities.	Human Interactions

Retention native trees, Wildlife Wonders Car Park, Tract. Photography by Tract

Habitat nest box, City of Unley. Source: Umwelt

WSUD bioswale, 12 Apostles Visitor Centre Car Park, Tract. Photography by Tract

WSUD planting, Fleurieu Aquatic Centre Car Park, Tract. Photography by Tract

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