

Landscape and Biodiversity

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1 Introduction

Randwick City has a rich diversity of natural, cultural and scenic landscapes and significant areas of remnant bushland, wetland and habitat corridors.

Landscape plays an essential role in integrating development into the streetscape and neighbourhood, enhancing appearance and amenity of the site and locality, providing for recreation and leisure, preserving natural areas and biodiversity and providing opportunities for improved stormwater management, environmental performance and micro-climatic conditions.

This section of the DCP outlines controls for preparing landscape plans and addressing various landscape design matters.

This section of the DCP should be read in conjunction with:

- Part A - Introduction and Part B - General Controls; and
- Other sections of the DCP for specific development types, locations or sites, if relevant to the application.

1.1 Objectives

- To promote high quality landscape design as an integral component of the overall design of a development.
- To provide landscape design and plantings that are compatible with the site and locality.
- To contribute to the preservation of and extension to fauna and flora habitats.

2 Landscape Plan

Explanation

A landscape plan is required to accompany applications for all new buildings, and for major alterations/additions which will impact on the existing tree coverage or landscaped area of a site.

Controls

Prepare a landscape plan in accordance with the Randwick DA Guide, including, but not limited to, the following elements and details:

- i) Details (e.g. location, height, condition, etc) of all existing trees within or adjacent to the site (including Council properties) and trees proposed to be removed/retained/relocated or pruned.
- ii) Details of existing natural features (e.g. rocky outcrops, cliff lines, water bodies, etc).

- iii) Details of design, including location of hard and soft landscaped areas and open space in relation to existing and proposed buildings.
- iv) Details, including locations, of selected plant species.
- v) Basic drainage details, i.e. location of all pits and lines, irrigation, hose cocks, etc.
- vi) Erosion and sediment control measures.

Note:

Different requirements are set out for landscape plans prepared for dwelling house development and other development types. Refer to the DA Guide for more details, including minimum qualifications required for preparing landscape plans.

3 Landscape Design

3.1 Minimum landscaped area and deep soil area

The design of landscaped areas and deep soil planting forms an integral part of the overall site planning for a development. Controls relating to location, minimum size and dimensions allocated for landscaped areas and deep soil zones are therefore incorporated into relevant DCP sections for various development types (as listed below):

- Low density residential
- Medium density residential
- Neighbourhood centres
- Local centres
- Industrial uses, and
- Specific sites

3.2 Existing vegetation and natural features

Explanation

Significant natural features and vegetation on the site, such as rocky outcrops, cliff lines, water bodies, trees, shrubs and groundcover vegetation should be retained and incorporated into the landscape design of the development.

Objective

- To conserve and incorporate significant natural features and vegetation of the site as part of the landscape design.

Controls

- i) Maximise the retention and protection of existing vegetation including trees, shrubs and groundcover vegetation.
- ii) Retain and incorporate existing natural features, such as cliffs and rock outcrops into the landscape design where possible.
- iii) Retain and stockpile topsoil for reuse in the landscaped area.

Note:

Refer to DCP section – Preservation of Trees and Vegetation for more detailed requirements on tree works.

3.3 Selection and location of plant species

Explanation

Suitable location and choice of plant species for the site is essential for achieving high standards of landscape design, residential amenity and biodiversity conservation.

Objectives

- To encourage the planting of appropriate native plants to contribute to the maintenance and extension of fauna and flora habitats.
- To ensure suitable plant species are selected for the existing aspect, soil and micro-climatic conditions.
- To ensure plants are appropriately selected and located to enhance the appearance and amenity of the development.

Controls

- i) Native species must comprise at least 50% of the plant schedule, incorporating a mix of locally indigenous trees, shrubs and groundcovers appropriate to the area and surrounds. Plant species, such as noxious weeds or invasive species must not be included in the landscape

Note:

Refer to Appendix 2 of Section - Preservation of Trees and Vegetation for a list of undesirable species. Please also contact Council's bushland/landscape officers for advice on appropriate native plant species.

This control may not be applicable for the setting of some heritage buildings or areas where a predominance of ornamental species may be more suitable.

design.

- ii) Include links to extend and enhance existing fauna and flora habitats through appropriate selection and location of plant species, where relevant.
- iii) Where suitable, incorporate food growing areas as part of the landscape design.
- iv) Select and locate plants to improve the environmental performance and living amenity of the development, such as:
 - a) plant deciduous shade trees to control solar access (e.g. providing shade in summer and allowing solar access in winter)
 - b) intercept glare from hard surfaces
 - c) channel air currents into the building
 - d) provide windbreaks where desirable, and
 - e) screen noise and reduce visual impacts to enhance privacy.

3.4 Water efficiency

Explanation

Landscape design has a significant effect on the quality and quantity of stormwater leaving the site and amount of water needed for irrigation.

Water efficient landscaping can assist in meeting BASIX water conservation targets for residential development and provide economic and environmental benefits to other development types (e.g. commercial, industrial and public open space).

Objectives

- To minimise landscape - related water consumption.
- To facilitate rainwater infiltration and minimise run-off through landscape design and plantings.

Controls

- i) Maximise the capture of rainfall and prevent runoff, by:
 - a) minimising the amount of hard surface area,
 - b) directing the overland flow of rainwater to permeable surfaces, such as garden beds, and
 - c) utilising semi-pervious surfaces for paved areas.
- ii) Plant low water consumption and deep rooting plants.
- iii) Avoid large areas of lawn, which generally require greater amounts of water and fertiliser than native groundcovers, shrubs and trees.
- iv) Design water features to function with non-potable water.
- v) Use water efficient irrigation systems, such as:
 - a) automated sub-soil drip systems,

Note:

Other water conservation practices include hydrozoning or grouping species with similar water needs and providing adequate soil depth to increase water storage, etc.

- b) soil moisture sensors, and
- c) use of non-potable water sources (e.g. rainwater).

3.5 Outdoor car parks & circulation areas

Explanation

Landscaping, as an integral part of outdoor parking design, offers a variety of benefits, such as shade for parked vehicles, screening the car parks from the street and public areas and softening the visual impact of large parking areas. Landscape in open car parks can also facilitate rainwater infiltration and help prevent runoff.

Objective

- To ensure outdoor ground level car parking areas are landscaped to provide shade for parked vehicles and improve the visual amenity of the car parks and adjacent areas.

Controls

- i) Incorporate landscape planting in outdoor ground level car parks containing 5 or more car spaces.
- ii) If landscaping is required, it must be designed in accordance with the following:
 - a) Planting should be provided along the perimeter and internal to the parking area.
 - b) Perimeter planting should provide adequate screening of the car park at street level and integrate with streetscape planting.
 - c) Planting must not hinder the visibility of both drivers and pedestrians, with open sightlines maintained between the car park, public roads and paths.
 - d) Internal planting should provide shade for vehicles. As a guide, 1 canopy tree per 4 adjoining car spaces should be provided.
 - e) Planter beds must provide adequate aeration and water to the root zones of plants.
 - f) The following plant species should be used for car parks:
 - Trees with tall trunks and ample shade coverage.
 - Plants that do not drop fruits, branches, sap or bark.
 - Plants of vigorous growth and with minimum long-term maintenance requirements.
 - g) Conflicts with utility services must be avoided by ensuring adequate distances between planting and lamp posts, above ground electricity lines, footpaths, kerbs and underground services, etc.
 - h) Appropriate vehicle barriers are required to protect the planter beds and plants from damage by moving vehicles.

4 Green roofs and green walls

4.1 Green roofs

Explanation

A green roof is a roof top that is partially or completely covered with vegetation. It can enhance the building's appearance, reduce visual mass, improve environmental performance (e.g. thermal performance), create habitats and minimises stormwater runoff.

A green roof system generally contains a waterproofing membrane and root barrier system, drainage system, filter fabric, a lightweight growing medium and plants.

Council will determine if green roofs can be included into calculation of landscaped area on a site-by-site basis. Applications considering green roofs are encouraged to contact Council's landscape officer prior to lodgement.

Objective

- To encourage well designed and maintained green roofs in suitable buildings and locations.

Controls

Any proposal for a green roof shall:

- i) Undertake a detailed site analysis to assess the site suitability, including consideration of the climate conditions (e.g. solar orientation and wind loads), surrounding environment and the structural capacity, age and condition of the roof, etc.
- ii) Suitably identify roof access (e.g. frequency and types of access), growing medium type and depth, function and type of green roof and plant schedule in accordance with the roof structural capacity.
- iii) Select native and drought/heat tolerant plant species.
- iv) Be designed with high standard components, including waterproofing membrane, growing medium, vegetation layer, root barrier, insulation and drainage system, etc.
- v) Maximise retention and reuse of stormwater.
- vi) Identify the most suitable irrigation system based on growing medium characteristics and plant needs.
- vii) Consider integration of solar panels on the green roof.
- viii) Prepare a maintenance plan detailing the maintenance arrangements for the following aspects as a minimum:
 - a) Inspection and maintenance of the waterproofing roof membrane



Application of Green Roof at Council's Prince Henry Centre

- b) Drain inspection
- c) Care of plants and growing medium, and
- d) Maintenance of the irrigation system.

4.2 Green walls

Explanation

A green wall is a vertical garden, either free-standing or part of a building, that is partially or completely covered with vegetation.

Similar to green roofs, green walls can potentially offer a range of benefits, such as enhancing the appearance of the buildings, lowering energy consumption through increased thermal performance, reducing noise transmission, improving air quality and increasing biodiversity.

Green walls can only be considered as a supplement to the required landscaped area for any development.

Objective

- To achieve well designed and maintained green walls in suitable buildings and locations.

Controls

Any proposal for a green wall shall:

- i) Design and locate green walls to suit the orientation and microclimatic conditions and enable access for maintenance.
- ii) Select a mix of native and ornamental species.
- iii) Provide details of the support system, demonstrating that the green wall can be removed without affecting the structural integrity or waterproofing of the building.
- iv) Ensure green walls are designed to function with an irrigation system using non-potable water.
- v) Suitably establish control and timing of the watering system.
- vi) Prepare a maintenance plan detailing the maintenance arrangements.