

Sydney Landscape Code

Volume 2: All Development Except for Single Dwellings



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Introduction

PART A



Image 1: Trio, Sydney

Introduction

A1 PURPOSE

The City of Sydney Landscape Code (the code) guides the creation of high quality, sustainable landscape spaces within private developments. Volume 2 of the code applies to all development except for single dwellings. Volume 1 of the code applies to single dwellings.

The Landscape Code provides practical advice and guidelines to assist land owners to contribute to the greening of the City of Sydney (the City). It specifies council guidelines for the preparation of landscape plans required for Development Application submissions. The code explains how your development can:

- create and enhance usable private landscape spaces
- establish a good relationship between the private domain and built form
- contribute to the character and amenity of the local area, streetscape and broader neighbourhood
- establish landscapes that are accessible and usable for all
- contribute to habitat provision
- support the City's urban tree canopy targets
- reduce the urban heat island effect
- manage storm water and reduce water usage.

SCOPE

The code applies to all new developments, alterations and additions on private land within the City of Sydney Local Government Area (LGA) unless noted otherwise.

The City recognises that, as the code applies to landscape areas within private land, each landowner will have their own functional objectives and aesthetic style. As such, the principles outlined in this document are not prescriptive, instead the code outlines considerations that will help make your development more environmentally and aesthetically pleasing and functional.

WHO SHOULD USE THE CODE?

The code should be used by private landowners, developers, architects, landscape architects and other designers who are undertaking development. The City of Sydney council officers will use this document as a reference when assessing development applications.

A2 HOW TO USE THE CODE

Volume 2 of the code applies to all development except for single dwellings. Please note that the use types outlined below correlate with the Sydney Development Control Plan 2012 (SDCP), which you must refer to for further requirements when preparing your DA.

Where a development application is for a house like development (e.g. town house) then reference should also be made to Volume 1 of the code. Types of development not listed in parts C or D should reference all parts of this code that may have relevance to the proposed type of land use.

Ensure that you have responded to all issues discussed in this document to help council officers assess your development application. By addressing the principles and guidance outlined in this document you will assist council officers in reviewing your development application. This will make the process faster.

TYPES OF LAND USE

Residential Flat and Mixed Use Development

Residential flat and mixed use developments combine residential uses and other uses within the same development. Other uses may include commercial, retail, employment or entertainment uses.

Commercial and Industrial Development

Commercial and industrial developments include bulky goods retail, display centers, commercial offices, warehouses, factories and industrial units.

DOCUMENT STRUCTURE

This code is structured as follows:

Part A provides general information for use of the code.

Part B outlines design guidance to be applied to all development types. It explains the common elements, types and spaces that should be considered for all developments and is described at three scales: the city scale, the site scale and the detail scale. Each element cross references the primary guidance shown in Part B1 as well as providing detailed considerations.

Parts C and D address additional design guidance in terms of:

1. **Site Planning:** the overall organisation of the landscape spaces. This includes understanding the site-wide constraints, the location of different landscape uses and the way people move through them.
2. **Landscape Spaces:** the separate types of landscape areas within a development. Each space must be designed and considered as part of the overall site. Landscape design requirements and site planning considerations should be applied to each landscape space.

Part C applies to residential flat and mixed-use developments.

Part D applies to commercial and industrial developments.

READING THE CODE

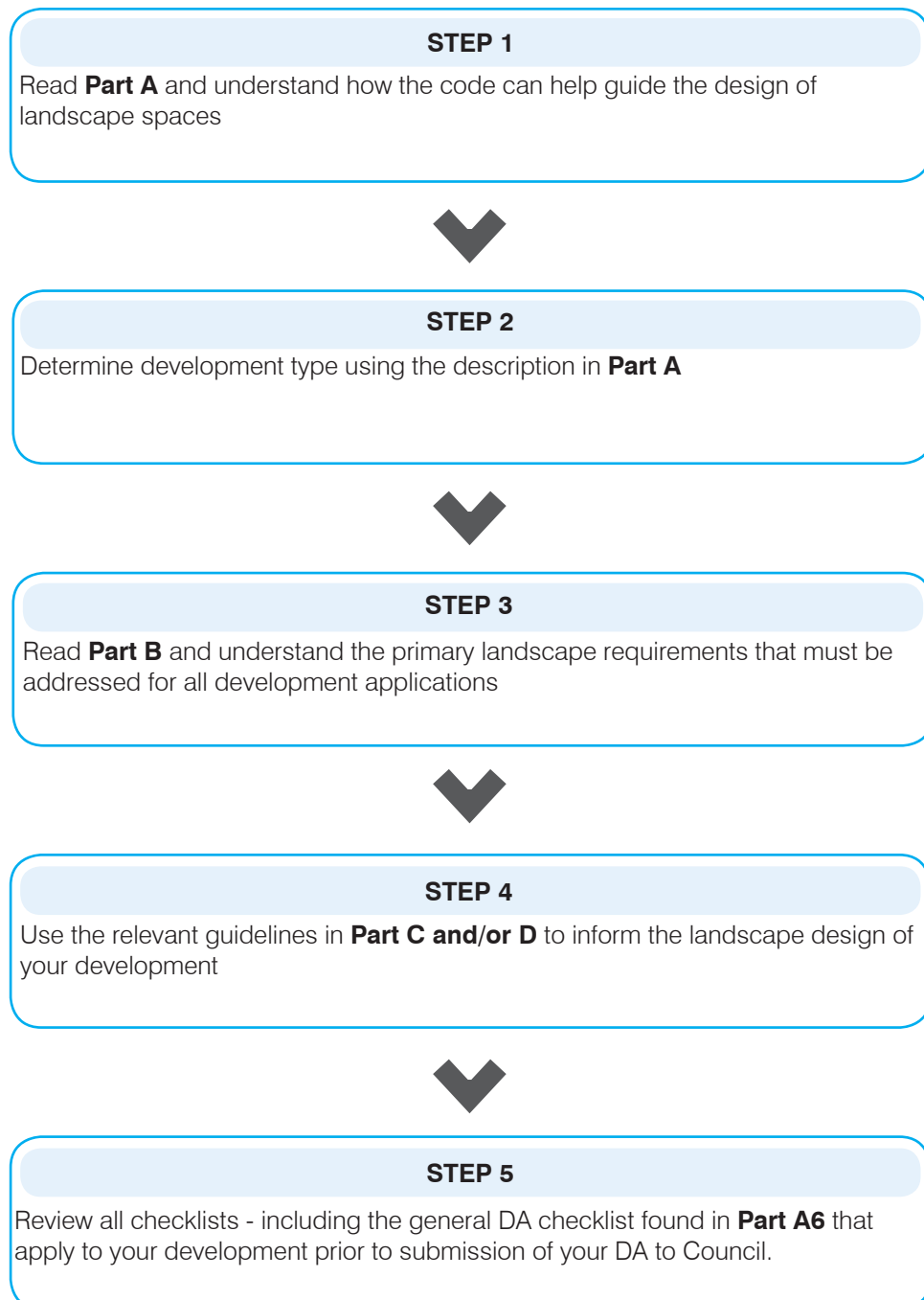


Figure 1: Flow chart explaining how to read the code

A3 RELATIONSHIP OF THE CODE TO OTHER PLANS AND POLICIES

The City of Sydney Landscape Code is to be read in conjunction with the City of Sydney's other documents, policies, controls and guidelines. The relevance of each document to this code is explained below:

The *Sustainable Sydney 2030 Plan* is the City's comprehensive strategic plan and was generated as a response to the community's ideas for creating a better Sydney. It sets the directions for all of the City's policies, controls and guidelines.

All development on private land must observe and comply with the *Sydney Local Environmental Plan 2012* (SLEP) and *Sydney Development Control Plan 2012* (SDCP). The SLEP is a legal document prepared by Council and approved by the State Government to regulate land use and development within the LGA. The SDCP is a document that supports the SLEP with more detailed planning and design guidelines.

To complement these documents, additional guidelines have been prepared by The City to assist with the design of new developments as well as alterations and additions on private land. These include:

- The Sydney Landscape Code (2016)
- Green Roofs and Walls Policy (2012)

In addition, the City has prepared a suite of design codes, guidelines and specifications to inform development of the public domain. Consulting these documents will help designers and applicants understand the context of their site and requirements for any works proposed within the public domain

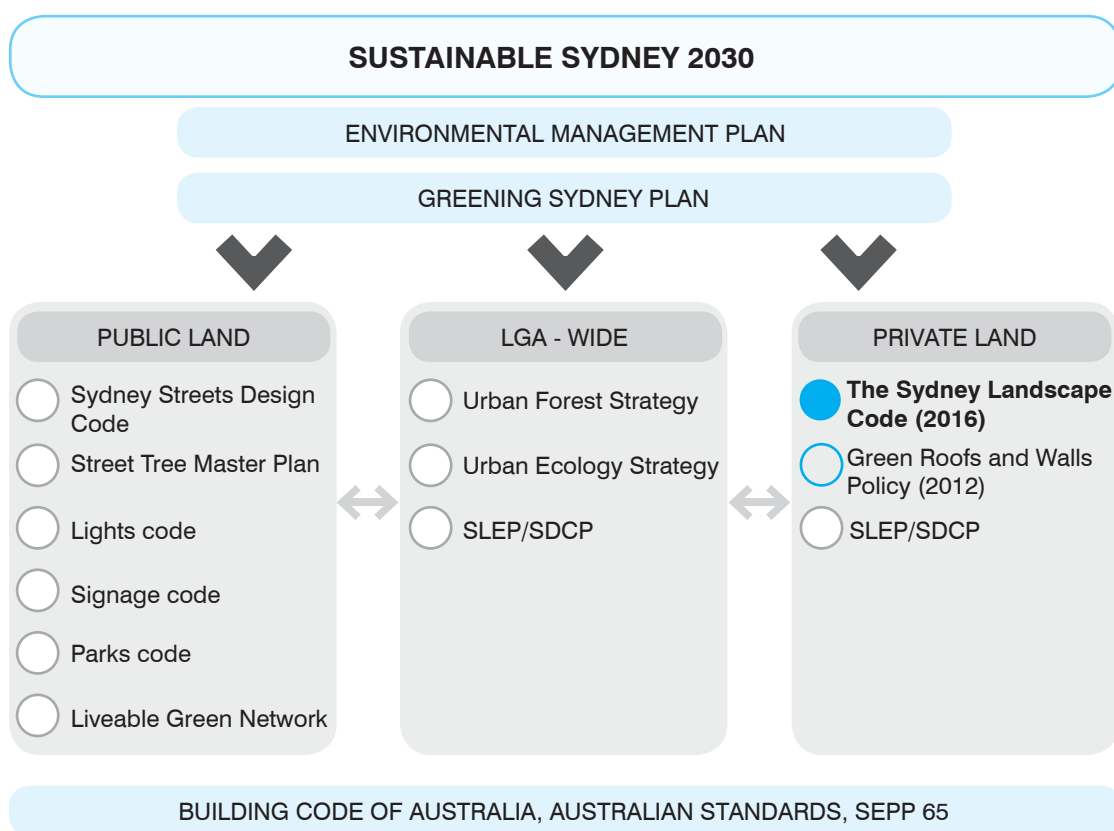


Figure 3: Relationship of the code to other plans and policies

SUSTAINABLE SYDNEY 2030

The private domain has the ability to contribute to the City of Sydney's 2030 vision for Sydney as a green, global and connected city. *Sustainable Sydney 2030* sets out 10 key targets, 5 big moves and 10 strategic directions. The following apply specifically to the design of landscape in the private domain.

TARGETS:

TARGET 3: at least 138,000 dwellings, 48,000 additional dwellings in the City for increased diversity of household types

TARGET 4: 7.5% of all City housing will be social housing, and 7.5% will be affordable housing

TARGET 7: at least 10% of City trips will be made by bicycle and 50% by pedestrian movement

TARGET 8: every resident will be within a 10 minute (800m) walk to a main street

TARGET 9: every resident within a three minute walk (250m) of continuous green links

BIG MOVES:

Number 3: a liveable Green Network

Number 5: transformative development and sustainable renewal

STRATEGIC DIRECTIONS:

Direction 9: sustainable development renewal and design

Objective 9.2: encourage the provision of additional open space as part of new developments

A4 GREENING SYDNEY

WHAT IS THE GREENING SYDNEY PLAN, AND WHY IS IT IMPORTANT?

The Greening Sydney Plan is a strategic document written to support the targets established by *Sustainable Sydney 2030*. It coordinates the projects and programs that focus on increasing tree canopy, landscape amenity and native habitat creation within the City. Urban greening ensures that our city remains livable and healthy despite growing population pressures. It provides habitat for plants and wildlife that are under increasing pressure from urban developments and encourages transformation of potentially under-utilised space (such as roofs, walls and city streets) into green, vibrant and beautiful parts of the city.

The Greening Sydney Plan is the City's commitment to:

- greener streets
- more parks and open space
- greening new developments and private land
- creating green links and urban wildlife corridors
- empowering the community to take green initiatives.

Green elements are some of the City's most important assets on both public and private land. There are significant benefits of having access to healthy, complex and biodiverse urban environments. Integrating greenery into the urban fabric improves air quality, cleans water, controls storm water runoff, maintains healthy soil, supports a healthy urban climate and minimises urban heat island effect. Research also shows that biodiversity contributes significantly to human health and well-being, and also to economic prosperity.

GREENING SYDNEY ON PRIVATE LAND

Privately owned land makes up 62% of the City's LGA, but only contributes 42% of the City's urban canopy. Significant improvements to both urban canopy and the greening of the City can be achieved through the provision of trees in green space in new developments and through maintaining established landscape features. This can include tree planting, deep soil landscape, green roofs and green walls.

The code has been developed to support the *Greening Sydney Plan*: establishing minimum guidelines and standards for the provision of open space, planting and urban canopy in new development and maintaining these elements on existing private land.

URBAN CANOPY

Trees are recognised as one of the City's most important assets and as a result the City has developed the *Urban Forest Strategy*. The urban forest refers to all the trees and other large vegetation found in gardens, parks and along our streets. The City's *Urban Forest Strategy* outlines how important trees are in making the City an attractive, sustainable and resilient city. It recognises that trees play a vital role in the environmental, social and economic sustainability of our city.

Urban forests will become increasingly valuable in the face of climate change. Maintaining and supplementing existing vegetation can help mitigate climate change. Trees absorb carbon dioxide, release oxygen and help cool the City.

These environmental, social and economic benefits underpin the City's requirement to increase canopy cover.

The City has analysed the amount of canopy cover required for our area. Targets have been set to increase the average total canopy cover by 50% by 2030 and 75% by 2050. This will mean the canopy cover percentages would increase from the current 15.5% coverage to 23% in 2030 and 27% in 2050.

The City is planting trees in streets and parks, however as private property occupies the most land within the City, it is vital that tree planting is undertaken within private property as well.

URBAN ECOLOGY

Urban ecology recognises the City as a habitat for people, vegetation and wildlife. The City encourages the creation of habitat to ensure the survival of indigenous plants, locally native flora and fauna species such as small birds, lizards, small mammals, frogs and insects. By designing landscapes that protect and enhance the ecological value of a site, your development can contribute to the City's *Urban Ecology Strategic Plan*.

Ecology on private land

Healthy ecosystems do not exist in isolation, but contribute and respond to the conditions of surrounding environments. The amount and quality of vegetation on private land has a significant impact on the overall urban environment, and as a result needs to contribute positively. The inclusion of diverse, locally indigenous plants and appropriate habitat planting is critical and can be done at all scales of development from large commercial courtyards to landscape setbacks, private gardens and balconies. Even the smallest pockets of vegetation can contribute to the overall system, and play a role in attracting wildlife and creating habitats.

Ecology Targets / Urban Ecology Strategy

The City aims to increase the overall quality and quantity of vegetation and habitats, with a focus on facilitating priority species as nominated in the *Urban Ecology Strategic Action Plan*. A network of biodiversity linkages has been identified and private developments can contribute positively to these.

A5 LANDSCAPE DESIGN PRINCIPLES

The following principles outline an ethical decision-making framework for landscape design. The principles support the Sustainable Sydney 2030 objectives and they direct the design of landscape interventions aimed towards more sustainable and holistic outcomes.

PRINCIPLE 1:

Promote responsive landscape environments

- Protect and incorporate existing natural features such as mature trees, rock formations and significant vegetation.
- Retain and incorporate cultural features such as heritage items, built structures, gardens and artwork.
- Include plant species that respond to the scale of development and the site's context.
- Respond to the public domain in a complementary manner.

PRINCIPLE 2:

Promote sustainability

- Increase the amount of tree planting and canopy cover on the site.
- Utilise indigenous plant species where possible and appropriate.
- Utilise robust and durable materials from sustainable sources.
- Consider material selections to assist in mitigating urban heat island effect.
- Provide connected landscape linkages to promote and contribute to biodiversity.
- Capture, store and recycle storm water for re-use.

PRINCIPLE 3:

Create beautiful and comfortable places for people

- Consider the landscape in the initial site planning and feasibility phase of the design process to ensure integration with the proposed development.
- Ensure all landscape spaces provide high levels of amenity.
- Ensure the landscape design has a strong, unifying concept while being engaging and functional.
- Utilise tree planting to provide amenity and interest within landscape spaces.
- Select high quality, robust materials that respond to the specific conditions of the site.

PRINCIPLE 4:

Contribute to and enhance the natural environment and urban ecology

- Include generous areas of deep soil and other planting. All planting should positively respond to the scale of development and the site's context.
- Increase the amount of tree planting and canopy cover on the site to support the City's urban forest targets.
- Contribute to urban ecology and regional biodiversity through use of endemic or native plant species.
- Mitigate the urban heat island effect through thoughtful selection of materials.

PRINCIPLE 5:

Promote and improve water quality

- Maximise permeable surfaces, storm water harvesting and detention storage opportunities to ensure clean storm water discharge from the site.
- Include deep soil and other soft planting areas to increase surface permeability of the site and improve infiltration into the water table.
- Utilise Water Sensitive Urban Design (WSUD) initiatives to assist in water cleansing, storage and treatment prior to discharge from or reuse on site.

A6 DA CHECKLIST OF REQUIRED INFORMATION

The following information is required when submitting a development application that includes landscape works. The code provides guidance for how to address each of these items.

☐ 1. Site Survey

☐ 2. Landscape Design Statement to be included in the Statement of Environmental Effects

Document how the proposed scheme addresses each of the relevant landscape principles, general landscape guidance and specific guidelines for the development type including checklists.

☐ 3. Landscape Strategy Diagrams

- ☐ a. opportunities and constraints including landscape features
- ☐ b. access and movement
- ☐ c. views
- ☐ d. ecological connections (existing vegetation, habitat and canopy)
- ☐ e. character and identity.

☐ 4. Landscape Plan

- ☐ a. boundary treatments including integration with the public domain
- ☐ b. trees (existing - show tree protection zone (TPZ) and structural root zone (SRZ), proposed and to be removed)
- ☐ c. levels including boundary/building/private/public/commercial interface conditions, contours (existing and proposed), location of on-site detention (if above ground), the top of walls etc
- ☐ d. areas of deep soil and extent of basement, other soil areas, depths and types
- ☐ e. structures (existing and proposed)
- ☐ f. materials including furniture, fences, walls and paving
- ☐ g. massing and arrangement of plants and trees, including species list and densities
- ☐ h. any works on or affecting adjacent land including land to be dedicated to public domain (reference the Street Design Code)
- ☐ i. existing and proposed electrical substations, underground services and utilities.

☐ 5. Landscape Sections

- ☐ a. a minimum of two site sections at 1:100 or 1:200 to illustrate the relationship between proposed landscape elements and the buildings, podium, site extents and adjacent development
- ☐ b. detail sections at 1:20 or 1:50 of all types of complex interfaces, e.g. street frontages, edges to roof terraces and interfaces to private open spaces.

☐ 6. Maintenance and Management Plan

for the full life of the landscape, including green roofs and walls, covering:

- ☐ a. desired heights for plants requiring pruning (e.g. hedges)
- ☐ b. tree works/maintenance (e.g. pruning)
- ☐ c. irrigation, mulch, fertiliser
- ☐ d. procedure for plant failure, covering species replacement and removal, particularly in locations where access is difficult, such as roof gardens and enclosed courtyards
- ☐ e. removal of green waste including large limbs from trees.

☐ 7. Arborist report for development affecting significant trees (if applicable)

- ☐ a. An Arboricultural Impact Assessment will be required at the development application stage. It is to be prepared by a qualified arborist (AQF Level 5) in accordance with the Australian Standard for the Protection of Trees on Development Sites (AS4970).
- ☐ b. A Tree Protection Plan may also be requested at the development application stage, or following consent, it may be required prior to the release of the Construction Certificate.

☐ 8. Green Roofs and Walls (if applicable)

- ☐ a. a cross-section of green roofs showing details of all the components such as drainage, irrigation, waterproofing and overflow design, accessibility, balustrading, earthworks, soil depths and mulch. Sections must show the proposed structure.
- ☐ b. evidence the green roof or wall has been assessed as part of the structural certification provided for the building
- ☐ c. evidence the green roof or green wall has been assessed as part of the waterproofing certification provided for the development.

Landscape Design Requirements

PART B



Image 2: One Central Park, Chippendale

Landscape Design Requirements

This section outlines the specific design guidance for typical elements found within landscape spaces at three scales of development, the city scale, the site scale and the detail scale.

Each element cross references the primary guidance shown in Part B1 as well as providing other detailed considerations.

The issues discussed here are common to most types of developments, however not all issues will be relevant to your project. This section may provide some useful ideas for making your development a comfortable, convenient and visually pleasing place.



Image 3: City Quarter, Camperdown

B1 PRIMARY GUIDANCE: LANDSCAPE DESIGN

This checklist is the specific design guidance to be addressed in the Statement of Environmental Effects for all developments including landscape works (excluding single dwellings).

Refer to Part A6 for the DA Checklist for all developments. Refer to Volume 1 of the code for Single Dwelling Landscape Design Guidance.

Document how your design has achieved the following:

☐ 1. The City Scale

- ☐ a. Sustainability: address how your development is sustainable and has implemented initiatives that support the City of Sydney's *Sustainable Sydney 2030* Vision (the vision).
- ☐ b. Urban canopy: address how your development meets the 15% canopy cover requirement and has located trees in appropriate locations.
- ☐ c. Urban ecology: address the importance of vegetation for preserving, improving and creating habitat in urban areas.

☐ 2. Site Scale:

- ☐ a. Water management: treat storm water on site. Consider what system is appropriate for your development and how it will meet the City's water management targets.
- ☐ b. Site planning and circulation: incorporate a variety of usable landscape spaces and provide a legible, safe circulation network for occupants.
- ☐ c. Deep Soil: provide appropriately sized and located deep soil areas that comply with SDCP requirements.
- ☐ d. Landscapes on structure: demonstrate that your proposal has incorporated set downs and structural provisions to support planting.
- ☐ e. Setbacks: treat setbacks to create an attractive visual outlook and improve the environmental viability of your development.
- ☐ f. Accessibility: design your landscape to be accessible to people of all abilities.

☐ 3. Detail Scale:

- ☐ a. Amenity Items: provide adequate and appropriate amenity items in all landscape spaces.
- ☐ b. Planting: use plant species that are suited to your site conditions and the scale of your development.
- ☐ c. Soil Depth, Volume and Quality: use soil that is fit for purpose and complies with minimum depth and volume requirements.
- ☐ d. Green Roofs and Walls: specify a green roof or wall system that is appropriate for your development, that uses appropriate plant species and can be maintained.
- ☐ e. Development Entries: reinforce the visual hierarchy and clarity of all entry points to your development including to private and communal courtyards, lobbies, and vehicular entries.
- ☐ f. Vehicle Access: demonstrate that landscape has been used to promote pedestrian safety and minimise visual dominance of vehicle access ways within your development.
- ☐ g. Materials and Finishes: use appropriate materials for each site situation that meet the requirements of use, aesthetics, privacy, safety, maintenance and sustainability.
- ☐ h. Maintenance: provide a maintenance strategy that complements the design.
- ☐ i. Lighting: incorporate an efficient, appropriate and environmentally conscious lighting strategy.
- ☐ j. Irrigation: incorporate an efficient and environmentally friendly irrigation strategy.

B2 THE CITY SCALE

SUSTAINABILITY

Sustainability ensures that the needs of the present are met without compromising the ability of future generations to meet their own needs.

Sustainable Sydney 2030 is the vision for making the City more sustainable, liveable, accessible, inclusive and economically sound.

Landscape plays an important role in achieving and promoting a sustainable city.

PRIMARY GUIDANCE

Demonstrate that your development is sustainable and has implemented initiatives that support the City's *Sustainable Sydney 2030* vision.

Methods for achieving sustainable targets of the vision include:

Improve and promote biodiversity:

- Increase canopy cover within your development.
- Use native species.
- Consider green roofs for additional habitat opportunities.
- Retain mature trees on site.
- Connect to habitat linkages.

Improve water quality:

- Integrate Water Sensitive Urban Design within the landscape.
- Maximise water storage for reuse.
- Use green roofs and walls as methods for collecting, storing and cleaning storm water.

Reduce water and energy use of a development:

- Maximise the use of recycled water.
- Use low water use plant species.
- Use green roofs and green walls to help improve the efficiency of buildings by regulating temperatures and reducing reliance on heating and cooling.

Promote the use of sustainable materials:

- Consider the provenance, manufacturing process, life span and durability of all materials.
- Consider the use of recycled materials where relevant.
- Minimise hard, impermeable surfaces.

Promote social interaction:

- Create a variety of spaces to encourage exchanges between user groups, spaces such as BBQ areas and communal vegetable gardens can encourage social interaction.

Promote the use of sustainable transport:

- Provide safe access for pedestrians and cyclists.
- Provide ample, safe and convenient bike parking.
- Provide direct cross site connections for pedestrians through your development where appropriate.



DOCUMENT REFERENCE:

Greening Sydney Plan 2012
City of Sydney Urban Forest Strategy 2013
City of Sydney Urban Ecology Strategic Action Plan 2014
City of Sydney Decentralised Water Master Plan 2012-2030

URBAN CANOPY

Urban canopy refers to all trees located throughout the local government area (LGA). Trees play a vital role in the health, social well-being and economic sustainability of the city and can positively affect the quality of life of people in urban areas.

In developing a comprehensive *Urban Forest Strategy*, the City has set targets to improve the quality and quantity of the City's urban canopy. These targets are outlined in **Part A4**

The *Sydney Development Control Plan 2012* (SDCP) objective is to ensure that tree canopy cover is considered and provided in all developments. The SDCP lists specific requirements for the minimum amount of canopy cover to be provided on private land, along with criteria for species selection, soils and other considerations.

PRIMARY GUIDANCE

Demonstrate that your proposal has met the SDCP required 15% canopy cover percentage and has located trees in appropriate locations.

Methods for improving the urban canopy include:

- retention of existing sound, healthy trees with adequate deep soil for healthy and safe growth
- selection of appropriate tree species, considering their mature size, whether they are deciduous or evergreen etc
- understanding of the type and volume of soil you have available, and what the tree will require for health and safe growth
- location of trees to achieve the greatest benefits (i.e. to provide shade, screening etc)
- location of trees with consideration to services and infrastructure.



DOCUMENT REFERENCE:

City of Sydney Urban Forest Strategy 2013

Sydney Development Control Plan 2012

AS4970-2009 Protection of trees on development sites

URBAN ECOLOGY

Urban Ecology (biodiversity) refers to living things that inhabit urban areas and the ecosystems they form. The aesthetic, cultural and economic values of biodiversity can positively affect quality of life for people in urban areas by providing a connection to and sense of stewardship of nature and the environment

The City aims to promote existing ecosystems, enhance existing biodiversity values and improve community awareness to create a liveable city.

PRIMARY GUIDANCE

Demonstrate that your proposal has considered the importance of providing vegetation for preserving, improving and creating habitat in urban areas.

Methods for conserving, improving and creating urban ecology include:

Vegetation

- retaining existing healthy understorey and groundcover vegetation
- selecting appropriate locally indigenous species where possible
- creating densely planted understorey vegetation
- incorporating appropriate understorey plant species that will provide shelter, food, or nesting sites for priority species. Consider rotational year round flowering and fruiting with the plants that you select, and consider the creation of areas of sanctuary where vegetation is unlikely to be disturbed
- incorporating densely planted vegetation at a variety of heights. This is vital for recreating necessary habitat for wildlife, and enabling the shelter and movement of animals along the ground and between trees and shrubs
- retaining and protecting existing vegetation on site until similar replacement vegetation has established.

Habitat

- retaining existing habitat features e.g. water bodies, rockeries
- connecting to existing biodiversity linkages, and adjacent ecosystems
- ensuring vegetation removal and establishment is undertaken when required to enable habitat provision
- providing components to compensate for the lack of natural occurring nests, such as clean water, logs, rock piles or walls, leaf litter and mulched areas to form important shelter and nesting sites. These typically include boxes for birds, bats and insects. Note that like other landscape features, nest boxes require regular maintenance.



DOCUMENT REFERENCE:

Greening Sydney Plan 2012
City of Sydney Urban Forest Strategy 2013
City of Sydney Urban Ecology Strategic
Action Plan 2014

B3 SITE SCALE

WATER MANAGEMENT

Water management is the responsible treatment of on-site storm water and runoff generated by your site. It aims to reduce water consumption, improve water quality and, in turn, reduce the impact on local water systems. The City promotes an at source approach to water management which relies on water being treated within individual developments.

Sustainable Sydney 2030 targets include 10% of the City's water to be from recycled sources and a 50% reduction in pollution being discharged into waterways.

Within landscape, Water Sensitive Urban Design (WSUD) provides the means to achieve these targets.

PRIMARY GUIDANCE

Demonstrate how your proposal manages, stores and treats storm water on site. Consider what system type is appropriate for your development and how it will positively contribute to meeting the City's water management targets.

Methods for on-site water management and reduction of water consumption include:

WSUD

- consideration of how storm water will be treated on your site and implemented as an integrated water treatment and management strategy- water treatment systems can include one or more of the following: grassed or landscaped swales, infiltration trenches and bio-retention systems, gross pollutant traps, wetlands, sediment ponds, rainwater tanks for storm water harvesting, rain gardens, rooftop greening and urban forests, porous pavements, aquifer recharge and reuse
- capturing storm water at a scale to match the demand of a site-stored rainwater can be re-used on site and specifically within the landscape for irrigation. This can help make your development self-sufficient and minimise your overall water consumption.

Vegetation

- integrating more vegetation into the urban areas can help slow down and filter pollutants in storm water and protect local waterways
- using appropriate plant species to filter and treat water within the landscape
- using native, endemic and low water use species where possible
- using low water use irrigation system as appropriate.

Materials

- promoting infiltration to the water table and mitigating the urban heat island effect by increasing permeable surfaces
- using large impermeable surfaces such as rooftops and car parks to capture rainwater.



DOCUMENT REFERENCE:

City of Sydney Decentralised Water Master Plan 2012-2030

SITE PLANNING AND CIRCULATION

Site planning refers to the placement of landscape spaces and circulation networks in relation to natural features, existing elements, urban context, built form (existing and proposed), public domain and neighbouring properties.

By planning your site to consider the relationship of spaces, scale and circulation networks you will create well connected, integrated and accessible landscapes for people of all abilities. Well planned landscape space can help contribute to the overall functionality, safety and visual appearance of your development.

PRIMARY GUIDANCE

Demonstrate that your development has incorporated a variety of usable landscape spaces and has provided a legible, safe circulation network for occupants.

When planning your site you must:

- provide legible pedestrian and cycle access directly linked to building entries
- provide multiple pedestrian access points from the street especially where there are long frontages or corner lots
- establish a clear circulation network and hierarchy to help define primary pedestrian movement paths
- minimise conflicts between various user groups such as pedestrians, cyclists and vehicles
- ensure open space is well connected to adjacent buildings, both physically and visually
- optimise solar access to landscape spaces. Ensure spaces have access to several hours of direct sunlight during winter months
- design spaces that are appropriately scaled for the size of your development and the number of users
- consider the range of user groups likely to use your development. Ensure your landscape addresses the functional needs of residents, workers and visitors and allows for flexible use of space for passive and active recreation
- consider locating open space adjacent to businesses (cafés and other retail) to help provide increased amenity for users.

DEEP SOIL

Deep soil zones are areas within a development of natural ground with no obstructions above or below and relatively natural soil profiles. Deep soil zones help promote healthy growth of large trees, protect existing mature trees and allow infiltration of rain water into the water table to reduce storm water runoff. Deep soil zones exclude areas on structures, pools and non-permeable paved areas.

Where possible, deep soil zones should be consolidated, contiguous and connected to other deep soil systems. They should be located so that large trees provide useful shade and amenity to achieve privacy between facing units in courtyards, or to mitigate the scale of high density development.

PRIMARY GUIDANCE

Demonstrate that you have provided appropriately sized and located deep soil areas within your development.

Methods and considerations for the provision of deep soil zones within your development include:

- designing car parking so it does not cover the whole site, providing zones for deep soil and where possible containing underground carparking beneath the building footprint
- providing consolidated and contiguous areas of free draining, deep soil with a minimum dimension of 3m (ADG 2015)
- locating deep soil in areas connected to existing deep soil systems such as on site boundaries or within setbacks
- utilising permeable paving materials where paving is required in deep soil zones
- utilising deep soil areas to retain existing trees and planting new large trees to support the urban tree canopy, biodiversity and urban wildlife linkages.

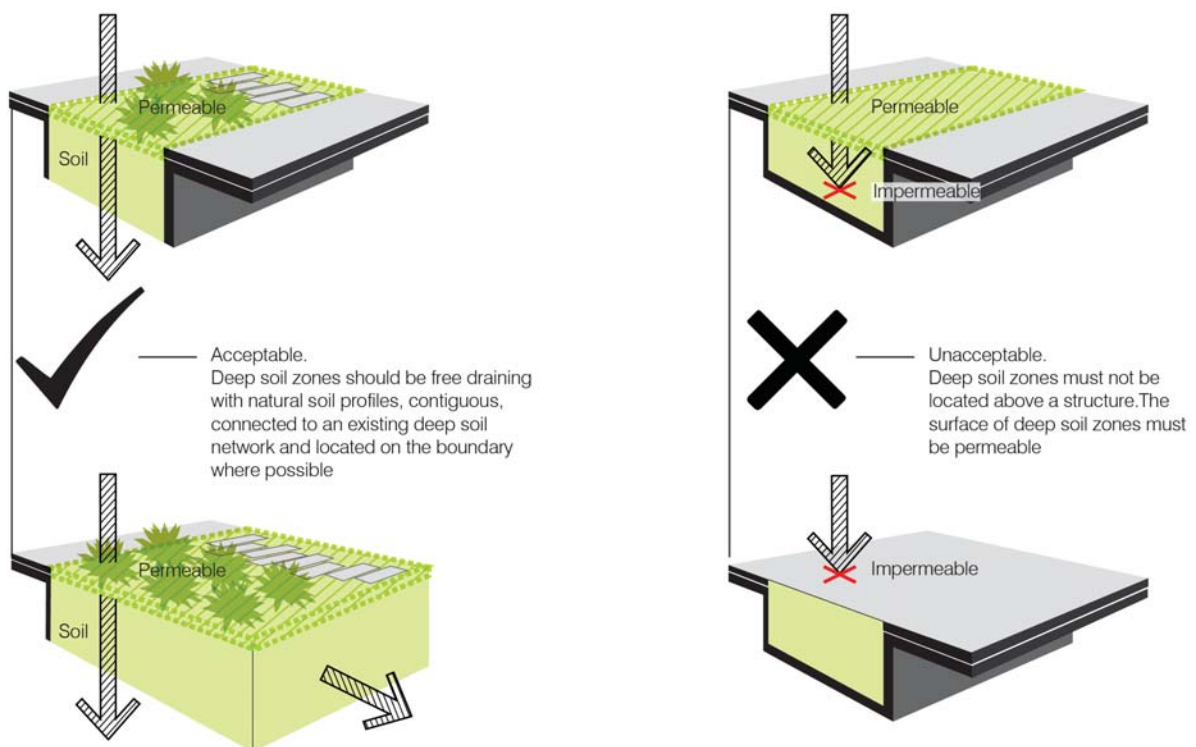


Figure 4: Description of acceptable deep soil arrangements



DOCUMENT REFERENCE:

Apartment Design Guide - June 2015
 Greening Sydney Plan 2012
 City of Sydney Urban Forest Strategy 2013
 City of Sydney Urban Ecology Strategic Action Plan 2014

LANDSCAPES ON STRUCTURE

Ensure that all landscape spaces located over a structure are identified during the site planning process. These spaces are typically located above car park or roof slabs and often have special soil, drainage and waterproofing requirements.

Landscapes on structure offer significant opportunities to improve landscape amenity and contribute greatly to the open space provision for your site. By considering landscapes on structure early in the design process, adequate soil depth, drainage and waterproofing can be accommodated. This will help these landscapes feel as verdant and generous as if they were located on natural ground.

PRIMARY GUIDANCE

Demonstrate that your proposal has incorporated set downs, soil depths and structural provisions to support planting.

Methods for designing successful landscapes on structure include:

- collaborating with the architect and engineers during the site planning phase to ensure set downs and appropriate soil depths, widths and volumes are incorporated in locations that are beneficial to landscape spaces
- where set downs are provided, ensuring the depth is suitable for paving thickness or required soil depth for proposed plants
- limiting the use of raised planter walls where possible to minimise visual and physical clutter within landscapes, except where they are purposeful, such as set at 450mm high as additional informal seating
- consider providing raised platforms or mounding to achieve required soil depth
- ensuring waterproofing and adequate drainage is provided
- considering how to capture, store and harvest run off from landscapes on structure for reuse on site
- utilising lightweight soil mixes on slab- soil should be free draining, porous and suitable for selected plant species.

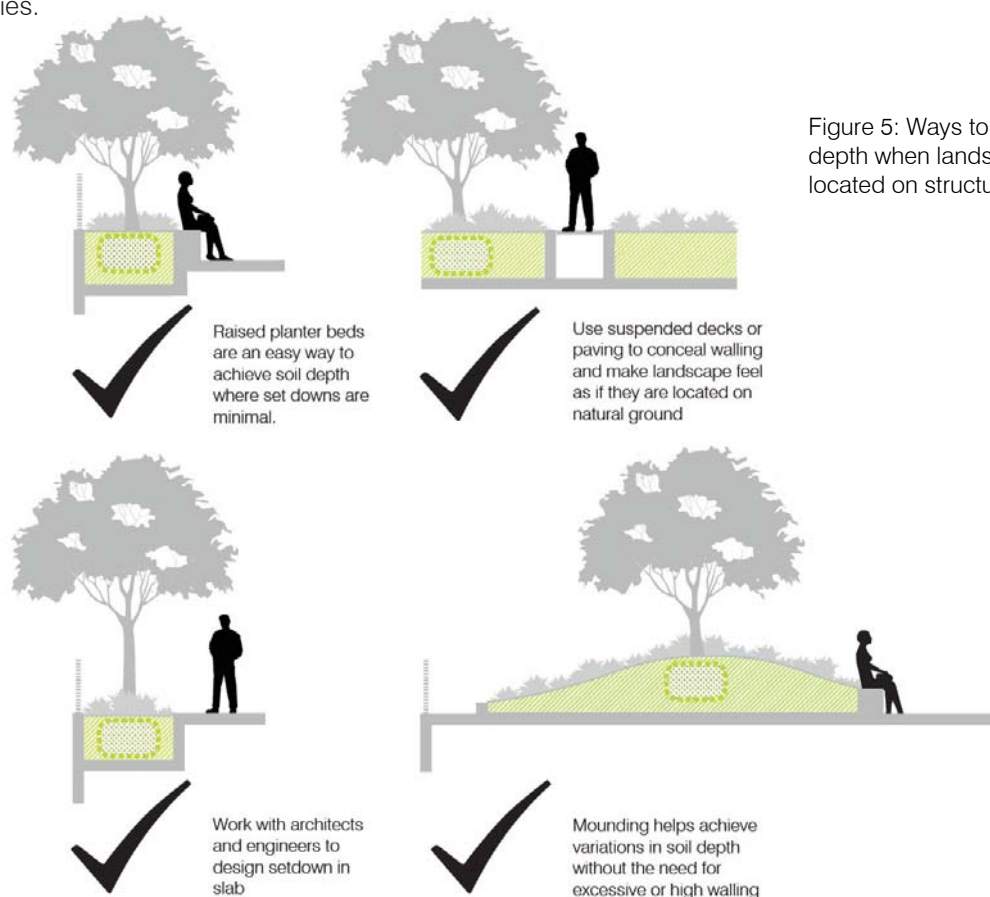


Figure 5: Ways to achieve soil depth when landscapes are located on structure

SETBACKS

Setbacks are the distance which a building is offset from the boundary or other defined reference point. The location of mandatory setbacks are pre-determined by the City and can be referenced in the SDCP. Where no setback or alignment is required, the setback and alignment should generally be consistent with adjoining buildings. Where setbacks exist, they should be utilised for both their functional and aesthetic benefits.

PRIMARY GUIDANCE

Demonstrate how you have used the setback treatment of your development to create an attractive visual outlook and to improve the environmental viability of your development.

Setbacks should:

- reduce the visual dominance of the building on the public domain
- respond to the character of the street, reference the City of Sydney's *Street Tree Master Plan* and use complementary plant species
- be environmentally sensitive, utilising areas for deep soil to retain significant existing trees and to provide WSUD. This will offer opportunities to improve site biodiversity and contribute to wider environmental systems
- be a natural extension of the public domain
- be easy to maintain
- consider and integrate signage for the development
- ensure that landscape design allows for views and natural surveillance from adjacent buildings and minimises opportunities for concealment whilst maintaining privacy. Avoid the placement of walls and trees adjacent to entryways that might block sight lines
- consider side and rear interfaces with neighbouring properties and their adaptability for potential future development.

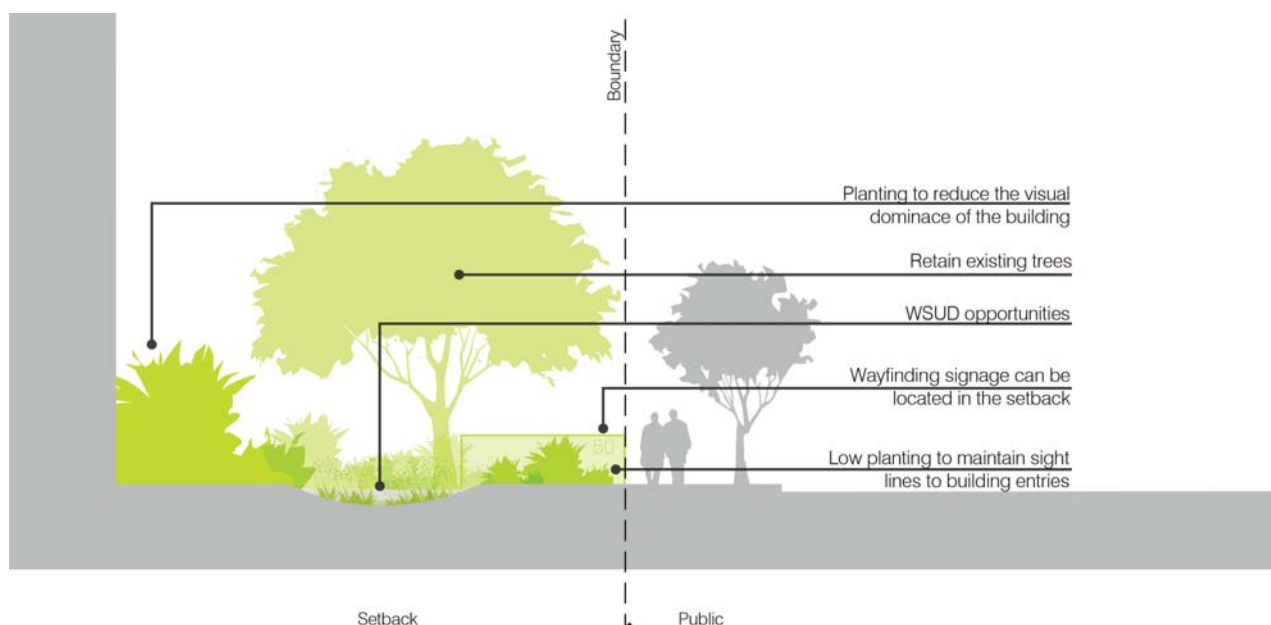


Figure 6: Setbacks can accommodate a range of uses that improve the function and beauty of the development



DOCUMENT REFERENCE:

Sydney Development Control Plan 2012
 City of Sydney Street Tree Master Plan 2011
 City of Sydney Decentralised Water Master Plan 2012-2030

ACCESSIBILITY

Access must be provided to landscape spaces for people of all abilities. The City aims to ensure the provision of a continuous accessible path of travel to support equitable and dignified access for everyone including older people, people with impairments or disabilities and families with prams. A continuous path of accessible travel is a footpath, path or accessway that is free of barriers such as steps, steep inclines, loose surfaces and obstructions such as furniture, bins and overhanging planting.

To ensure the provision of universally accessible landscape spaces, all proposals must be designed to comply with relevant standards and controls relating to accessibility and mobility. These include the *Disability Discrimination Act 1992* (DDA92), *Building Code of Australia* (BCA) and *Australian Standards 1428.1 (2009) Design for Access and Mobility*.

PRIMARY GUIDANCE

Demonstrate that your landscape proposal is accessible to people of all abilities.

To achieve accessible landscape spaces, consider:

- minimising the use of stairs and ramps. By integrating soft landscape the visual impact of stairs, ramps and handrails can be minimised. Set downs in slabs can help reduce level changes within landscapes
- providing widths of paths to accommodate a range of users. Ensure paths are level, paved and free of obstacles
- providing pedestrian paths that are clearly marked
- providing clear, legible accessways to building entries, courtyard and communal areas as well as between buildings and courtyards
- locating planting so that it does not overhang onto the footpath creating an obstruction. This is particularly important for people who are visually impaired as tree or shrub branches may not be detectable at ground level by people who use a white cane
- ensuring planting selection avoids species that drop seeds, bulbs or other potential hazards on the footpath.



DOCUMENT REFERENCE:

Australian Standards 1428.1 (2009) Design for Access and Mobility

Building Code of Australia

Disability Discrimination Act 1992 (DDA92)

B4 DETAIL SCALE

AMENITY ITEMS

Amenity items are elements or features within a landscape that contribute to the physical comfort of a space. These elements can increase the value of a landscape and make spaces more attractive, convenient and functional for users.

PRIMARY GUIDANCE

Demonstrate that your proposal has provided adequate and appropriate amenity items in all landscape spaces.

To promote the amenity of your development consider:

- integrating elements such as benches, lighting, shade etc as part of the overall landscape design. Consider location of elements in relation to adjacent uses and environmental factors such as sun/shade and wind
- locating seating, bins and lighting along paths and in communal landscape spaces
- arranging bbqs, tables and seating to encourage social engagement i.e. group seats at right angles
- locating bike parking along bike paths and in close proximity to the building entry (or entries)
- providing areas for public seating next to cafés etc
- incorporating public art to bring visual interest to a space
- providing shade and weather protection. Consider how natural and built elements will create a different quality of shade
- incorporating generous areas of soft landscape, retaining sandstone outcrops and mature trees to provide visual amenity for the development.

PLANTING

Planting can be used to define and separate spaces, screen and soften building façades, increase permeable surfaces and create visual interest within landscapes. Plant selection can help meet the City's targets for tree canopy cover, biodiversity and sustainability.

PRIMARY GUIDANCE

Demonstrate that you have selected plant species suitable for your site conditions and the scale of your development.

Considerations for planting on your site include:

Species Selection

- Identify appropriate species for site conditions. Use plants endemic to the Sydney region where possible or suitable exotic species.
- Incorporate a range of planting types of varying scales, including trees, shrubs and ground-covers. Plants can be layered to create a rich, diverse garden setting.
- Select trees and other plants that are appropriately scaled for your development.
- Select species to help minimise maintenance and the required watering of plants.
- Select hardy and low maintenance plant species.

Spatial Planning

- Retain existing trees and locate areas of open space around them.
- Locate trees away from buildings and boundaries. Consider the mature height and spread of the tree when positioning it in the landscape to accommodate future desired views and solar access. Use deciduous trees to maximise solar access for winter sun.
- Where planting is proposed, ensure sufficient soil depth, width and volume is provided. Shallow soils cause the ground to dry out and plants to fail.



Image 4: Use planting to help define building entries and landscape spaces



Image 5: Use a variety of plant species to help create a visually interesting landscape

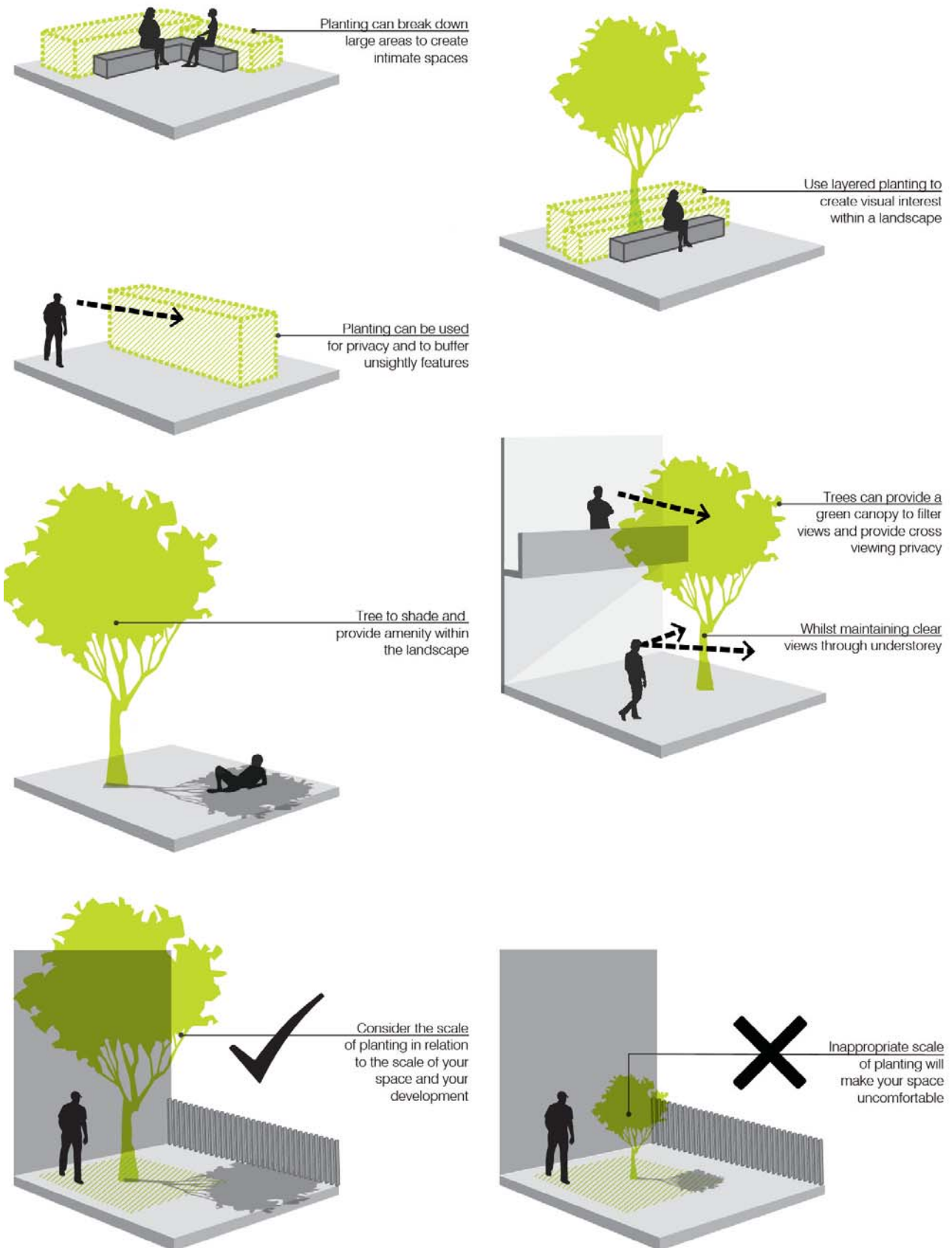


Figure 7: Methods for using planting in a variety of ways within a landscape

SOIL DEPTH, VOLUME AND QUALITY

Appropriate soil specification including depth, volume and quality will improve the viability of all planting on your site. By carefully considering and utilising appropriate soil for each application, the success of landscape spaces and visual quality of your development will be maximised.

PRIMARY GUIDANCE

Demonstrate that the soil proposed in your design is fit for purpose and complies with minimum depth and volume requirements. Multi-Unit Residential developments must comply with the Apartment Design Guide.

Considerations:

- Use soil suited to the range of plant types proposed in your development.
- Nominate soil appropriate for its proposed application. For example, light weight soil may be required for use on structure.
- Improve the quality of site soil by digging in organic matter (such as manure and / or composted green waste). This can help aerate the soil and increase its permeability. Organic matter should be used in the top 300mm of soil in areas of mass planting only.
- Determine required soil volumes dependent on the mature size of proposed trees. A large tree will require a greater volume of soil than a small tree.
- Consider engaging a soil scientist to test existing soil and/or design specific soil mixes for your development. They can assist in designing shallower soil profiles for use on structure.

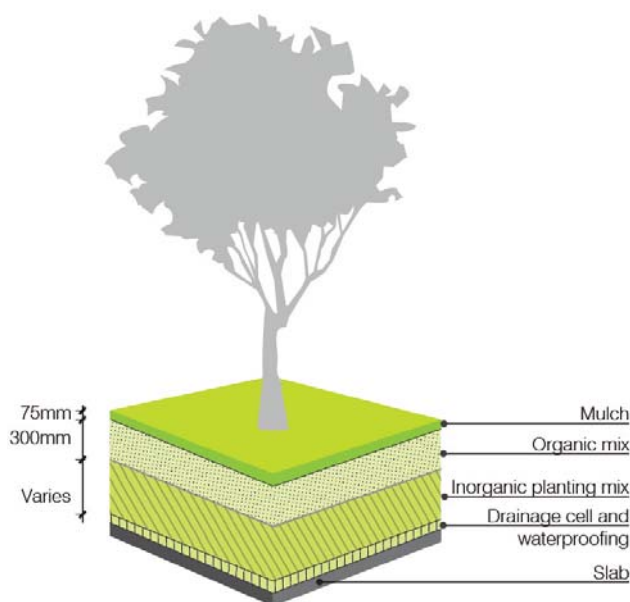


Figure 8: Soil Profile detail for planting on structure

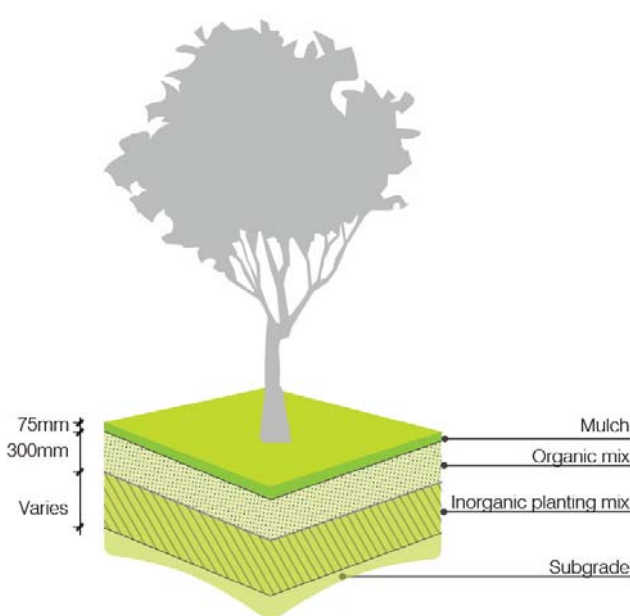


Figure 9: Soil Profile detail for planting on natural ground



DOCUMENT REFERENCE:

Apartment Design Guide - June 2015

HELPFUL HINT:

How much soil do plants need?

Most trees have a root plate rather than a root ball. This means that they prefer to spread their roots across a broad, shallow area of soil rather than growing in a narrow, deep area of soil. The relationship between the width of the root plate and the diameter of the tree trunk needs to be balanced to give the tree stability.

The volume of soil required for a tree differs depending on the type of tree, the type of soil and the amount of water (rainfall or irrigation) that the tree receives.

The following minimum soil depths for planting on structure is outlined in the ADG. Depths have been calculated assuming fortnightly irrigation. Any sub-surface drainage requirements are in addition to the soil depths listed.

Mature Size	Height	Canopy Width	Soil Volume (per tree)	Soil Area on Structure	Minimum Depth
Small Trees	6-8m	4m	9m ³	3.5m x 3.5m	800mm
Medium Trees	8-12m	8m	35m ³	6m x 6m	1000mm
Large Trees	12-18m	16m	150m ³	10m x 10m	1200mm

All volumes are subject to review against current industry best practice standards. An arborist or soil scientist can provide specific advice about the volume of soil that planting requires in your development.

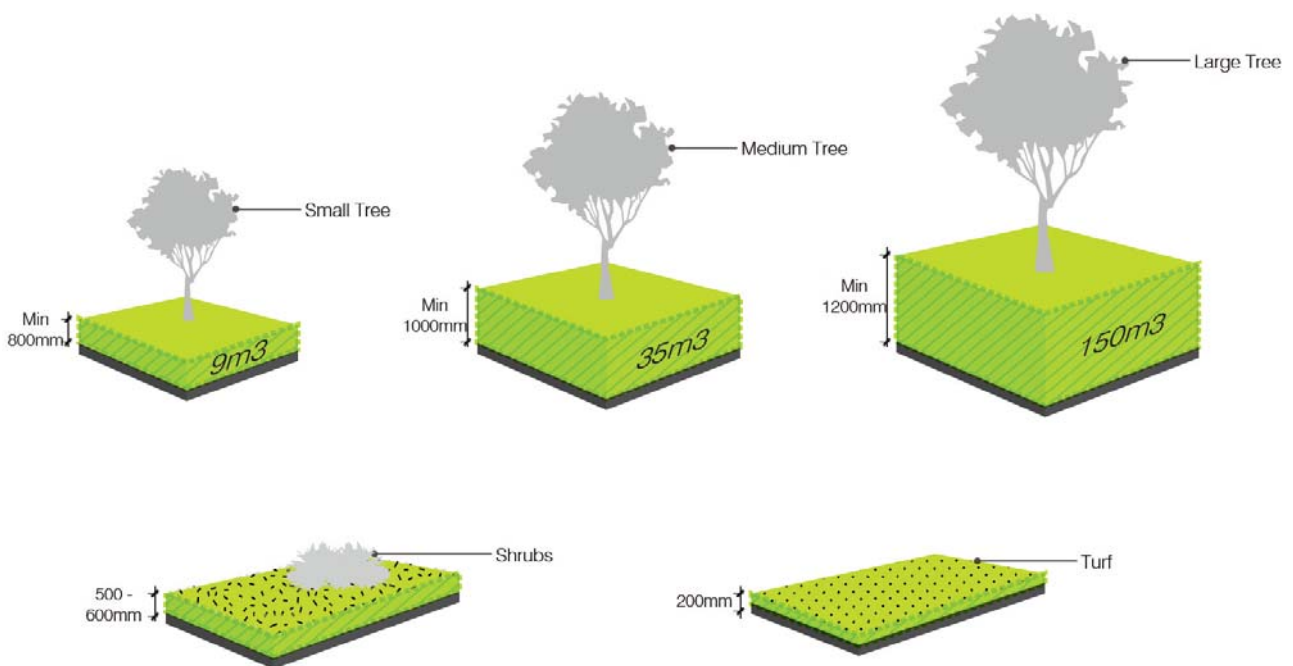


Figure 10: Minimum soil depths and volumes required for small, medium and large trees, shrubs and turf on slab. Soil volume does not need to be rectangular. It relates to the total volume of soil that tree roots may access.



DOCUMENT REFERENCE:

Apartment Design Guide - June 2015

GREEN ROOFS AND WALLS

Green roofs and walls are an efficient way to maximise space and create amenity whilst providing measurable environmental and social benefits.

When space becomes constrained, green roofs and walls are an efficient way to insulate the building from heat and noise, create habitat to support urban ecology and add beauty to a building. There are a variety of green roof and wall types that should be considered when planning your development.

PRIMARY GUIDANCE

Demonstrate that your proposal specifies a green roof or wall system that is appropriate for your site. It should utilise appropriate plant species and incorporate ongoing maintenance systems.

Green roof and wall designs should:

- provide sufficient soil depth and soil type for the plants and system being used
- be designed to ensure safe and easy access for installation and maintenance
- minimise water consumption and investigate the potential to harvest rainwater for watering
- make adequate provision for drainage and storm water runoff
- respond to the particular sun, wind and shade conditions of the roof or wall environment.

HELPFUL HINT:

RECOMMENDED SOIL DEPTHS:

These are minimum soil depths endorsed by the City of Sydney. Deeper soils may be required for different landscapes or types of vegetation.

Plant type	Minimum soil requirements
Turf	200mm
Grass and ground covers	300 - 450mm
Shrubs	500 - 600mm
Trees	800 - 1200mm (tree size dependant)

GREEN ROOF WEIGHTS

This table provides a rough guide to the saturated weights of green roofs compared to other materials. It is a guide only and a qualified structural engineer can assess the design and weight of your particular green roof design.

Material	Depth	Approximate weight
Soil	100mm	120 Kg/m ²
Soil	500mm	600 Kg/m ²
Gravel	100mm	150 – 180 Kg/m ²
Pavers	40-50mm	70 – 150 Kg/m ²



DOCUMENT REFERENCE:

City of Sydney Green Roofs and Walls Policy - 2014
City of Sydney Green Roofs and Walls Policy
implementation Plan - 2014
Apartment Design Guide - June 2015

DEVELOPMENT ENTRIES

Development entries are the public address to your site. They include entries to private and communal courtyards, lobbies and basement car parks. Landscape can be used to define and reinforce all entry points. By utilising wayfinding techniques, entry points can be clearly marked and identifiable.

PRIMARY GUIDANCE

Demonstrate how landscape has defined and reinforced visual hierarchy and clarity of all entry points to your development including to private and communal courtyards, lobbies, and vehicular entries.

Considerations for development entries include:

Wayfinding

- Where there are a range of building entry points, make sure that they provide direct, legible access from the street and are distinguishable from one another.
- Use landscape paving and planting to help establish a hierarchy and mark building entry points.
- Use consistent markers or signage to help define entries, assist in overall site wayfinding and create a sense of identity for the development.

Privacy and Safety

- Minimise opportunities for concealment by considering placement of walls and trees. Ensure building entries have good site lines to and from the street.
- Manage the need for clear entry points with the need for privacy in residents' terraces and courtyards.

Amenity

- Consider locating functional features on building entry paths. N.B. letterboxes must be in secure areas.
- Provide shade and weather protection to primary building entries.

VEHICLE ACCESS

PRIMARY GUIDANCE

Demonstrate that landscape has been used to promote pedestrian safety and minimise visual dominance of vehicle access ways within your development.

Vehicle access ways are entries to service areas or car parking areas within your development. They require clear street connections and usually access to buildings façades. Landscape can be used to define and minimise the impact of vehicle access ways and reinforce a hierarchy of access for your development.

Vehicle access ways should:

- be separated and clearly defined from pedestrian access routes to improve pedestrian safety and comfort
- use changes in surface materials and variations in planting to assist in defining access types and provide separation
- consider changes in surface materials or textures as traffic calming methods on access ways
- minimise length, width and number of access ways within the landscape. The visual impact of access ways can be minimised by changing alignments and screen planning
- be integrated with the buildings façade. Utilising the architectural materials and colour palette to minimise visibility of vehicle access ways from the street.
- use designed structures and planting to screen garbage collection, loading and servicing areas.



DOCUMENT REFERENCE:

Apartment Design Guide - June 2015
Sydney Development Control Plan 2012

MATERIALS AND FINISHES

Materials and finishes within the landscape can greatly assist the functionality and longevity of your development.

By selecting appropriate materials you can improve the aesthetics of your site, promote a safe environment for users and minimise the need for ongoing maintenance.

PRIMARY GUIDANCE

Demonstrate that your proposal uses appropriate materials for each application and meets the requirements of use, aesthetics, privacy, safety, maintenance and sustainability.

Considerations for materials selection include:

Use

- Consider the intended use and activity of a space and ensure materials are durable and suitable for their location (appropriately sized and structurally suitable).
- Consider the noise implication of the material selected e.g. crushed gravel may not be appropriate for a highly trafficked footpath near a residential unit.
- In spaces adjacent to the public domain, ensure there is consistency of materials with public domain palettes.

Colour, texture and finish

- Consider location and sunlight when choosing materials. Dark colours can contribute to an urban heat island affect, light colours can create glare and mark easily.
- Consider different materials and colours used to emphasise circulation routes and identify a hierarchy of spaces.
- Consider the texture of materials when designing spaces. Excessively rough or smooth surfaces may result in trip or slip hazards.
- Ensure all materials meet relevant industry standards such as slip resistance for paved surfaces.
- Ensure material selections form a cohesive palette with landscape and built elements including buildings.
- Use variations in materials to differentiate between the public and private spaces.
- Materials that contribute to a human scale are preferred, detailing should create tactile, warm and well scaled surfaces.

Maintenance

- Ensure products are easily obtained if replacement is required, or provide a stockpile for maintenance if a rare, bespoke product is used.

Sustainability

- Use ethically sourced sustainable materials within the landscape design. Consider the provenance, manufacturing process and durability of all materials.
- Consider the intended lifespan of products.

MAINTENANCE

Maintenance of landscape spaces can help retain a positive visual quality for your development.

PRIMARY GUIDANCE

Demonstrate that you have considered how the landscape will be maintained and that a maintenance strategy has been prepared for your development.

To provide efficient and effective maintenance, ensure:

- all spaces within a development are easily and safely accessed from communal or public land
- a maintenance strategy is provided with your proposal. Ensure your landscape plan and specification reflects and supports the proposed maintenance strategy
- materials and systems are entered into a maintenance manual for the project
- garden storage facilities are provided in communal areas. Connections to water, power and drainage are provided
- the requirement for private residents to maintain communal landscape features or elements is reduced, consider if some spaces should be private courtyards maintained by individuals
- plant species selection is appropriately suited to site conditions to help minimise maintenance and required watering of plants
- the use of robust, durable and low maintenance materials.

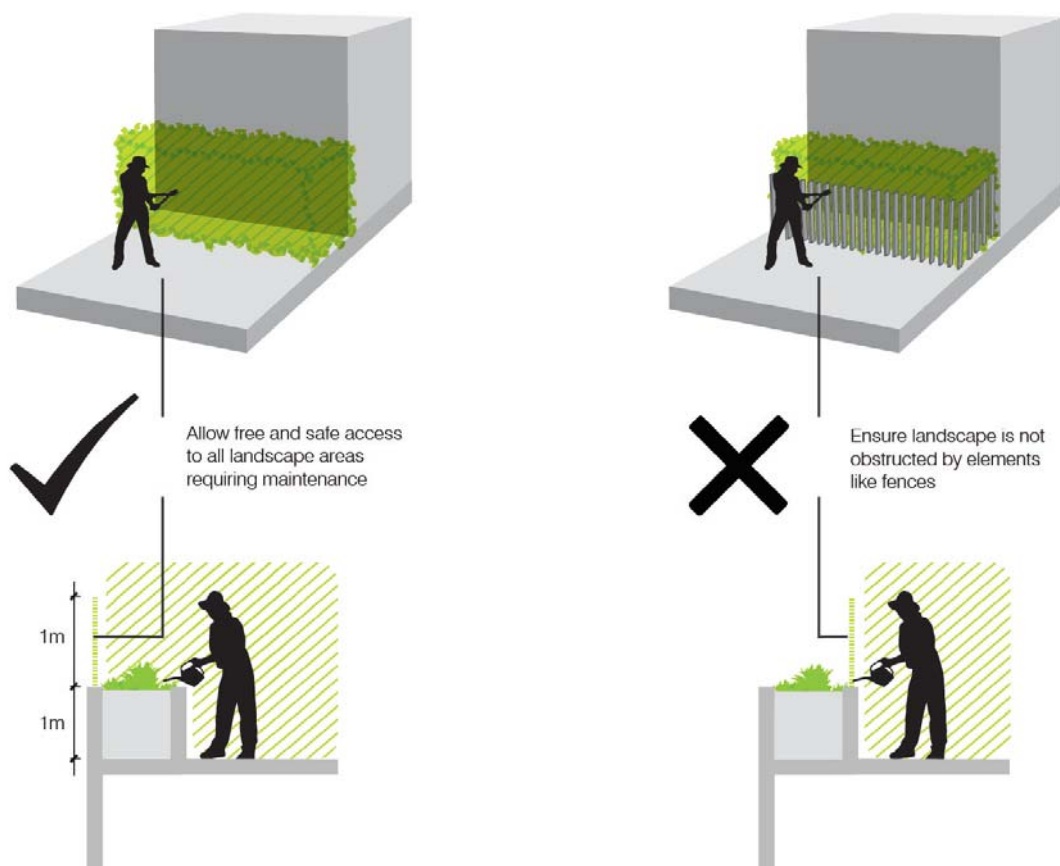


Figure 11: Demonstration of acceptable landscape configurations to allow easy and safe maintenance

LIGHTING

Lighting can improve the safety of all areas within your development as well as providing visual interest to the landscape spaces. When used well, light discourages antisocial activity, enhances natural surveillance, makes the landscape more inviting and acts as visual outlook at night. Lighting can be used to mark entry ways, paths, signage and landmarks within a development. A constant level of lighting should be provided, avoiding bright spots and shadows.

PRIMARY GUIDANCE

Demonstrate that your proposal has incorporated an efficient and environmentally conscious lighting strategy.

An effective lighting strategy should:

- provide a site-wide, integrated lighting approach that addresses statutory lighting requirements and lux levels
- use a hierarchy of lighting levels and types to define spaces and usage patterns
- ensure site entries, building entries and directional signage is well lit
- ensure lighting infrastructure such as light fittings are durable, robust and have a consistent design and appearance
- limit glare and light spill from your development into residences, private courtyards and the public domain
- use ambient light from the street and other landscape spaces to assist with lighting of your development
- utilise lighting to support Crime Prevention Through Environmental Design (CPTED) initiatives.



Image 6: A variety of light quality can discourage antisocial behaviour and make the landscape more inviting



Image 7: Integrate lighting into landscape elements such as stairs and access paths

IRRIGATION

Integrate a professionally designed irrigation system into the landscape proposal. The system must suit site conditions and the requirements of the landscape. This will enable an efficient, verdant and successful landscape proposal that is sustainable, optimises water use and requires minimal on-going maintenance.

PRIMARY GUIDANCE

Demonstrate that your proposal has incorporated an appropriate, efficient and low water use irrigation strategy.

Methods for ensuring an efficient irrigation system include to:

- consider appropriate species selection, soil depth and soil quality to help minimise maintenance and watering requirements
- consider whether a manual or automatic system is appropriate for your development
- consider rain sensors fitted to irrigation systems as a mechanism to reduce water use
- provide good drainage from all garden beds and irrigated areas
- use recycled water for irrigation
- amalgamate planter beds to improve efficiency of irrigation systems
- use mulch in garden beds to reduce water evaporation from soils
- consider how irrigation system will be maintained.

BASEMENT VENTILATION

Basement ventilation systems are a functional requirement for underground car parks. Vents, louvres or other systems should be integrated within the facade of a building but away from the view of communal landscape areas. Ensure planting is not located directly in front of mechanically ventilated basement intakes. All screening devices should be permeable to allow ventilation and air flow.

BIN STORAGE

Waste storage areas must be integrated into the overall proposal (preferably within the building) to reduce the negative visual impact they might have on the development and the public domain. Sufficient space and access must be provided to all waste storage areas. Specific provisions for waste management and storage are outlined in the City of Sydney Policy for Waste Minimisation in New Developments and the SDCP.

SERVICES

The screening or integration of site services such as fire booster valves, electrical cabinets and substations is required to improve the presentation of your development. Ensure sufficient access is provided to all service facilities. Specific standards and requirements of services providers must be adhered to.

Residential Flat and Mixed Use

PART C



Image 8: The Village, Balgowlah

Residential Flat and Mixed Use Development

Residential flat and mixed use developments combine residential uses with other uses such as commercial, retail, employment and entertainment uses within the same site.

The range of users within a mixed use or residential flat development result in complex landscape needs. Types of landscape spaces commonly found in residential flat and mixed use developments include communal open space, private open space, through-site links and the interface of each of these spaces with the public domain.

Successful mixed use and residential flat landscapes respond to and enhance the dwelling's context, the building's architecture and scale, the property's unique landscape qualities and the needs of a diverse range of residents, visitors and workers. These types of developments can create and nurture places that are energetic and engaging places to live and work.



Image 9: New Acton, Canberra

C1 PRIMARY GUIDANCE: RESIDENTIAL FLAT AND MIXED USE DEVELOPMENTS

This checklist is the specific design guidance to be addressed in the Statement of Environmental Effects for all residential flat and mixed use developments.

Refer to Part A6 for the DA Checklist for all developments. Refer to Volume 1 of the code for Single Dwelling Landscape Design Guidance.

Demonstrate that your design has achieved the following:

☐ 1. Site Planning

- ☐ a. Site planning, design and circulation: incorporate a variety of integrated, functional, connected and people friendly landscape spaces.

☐ 2. Landscape Spaces

- ☐ a. Communal open space: provide a usable and flexible communal space that caters for the needs of a variety of user groups
- ☐ b. Private open space: incorporate meaningful and functional private open space
- ☐ c. Private open space fronting the street: design development frontages to complement and connect the private and public domain and comply with the street interface guides
- ☐ d. Interface between private and communal open space: design the interface between private and communal open space to promote privacy and comfort for the residents
- ☐ e. Through-site link: define the public nature of the through-site link as a clear, unambiguously public pedestrian space with management of safety, security and privacy.

☐ 3. Landscape Design Requirements

- ☐ a. Read and responded to the guidance in **Part B** of this document.

C2 SITE PLANNING

SITE PLANNING, DESIGN AND CIRCULATION

Residential flat and mixed use developments are comprised of a number of different, defined landscape spaces. These spaces include communal open space, private open spaces, setbacks, through-site links and the interface between public and private spaces. Each space must be integrated and connected to the development by a clear circulation network. Well designed and considered landscapes can help contribute to the overall visual appearance and functionality of the development.

PRIMARY GUIDANCE

Demonstrate that you have incorporated a variety of integrated, functional, connected and people friendly landscape spaces into your site.

The design of residential flat and mixed use landscapes should:

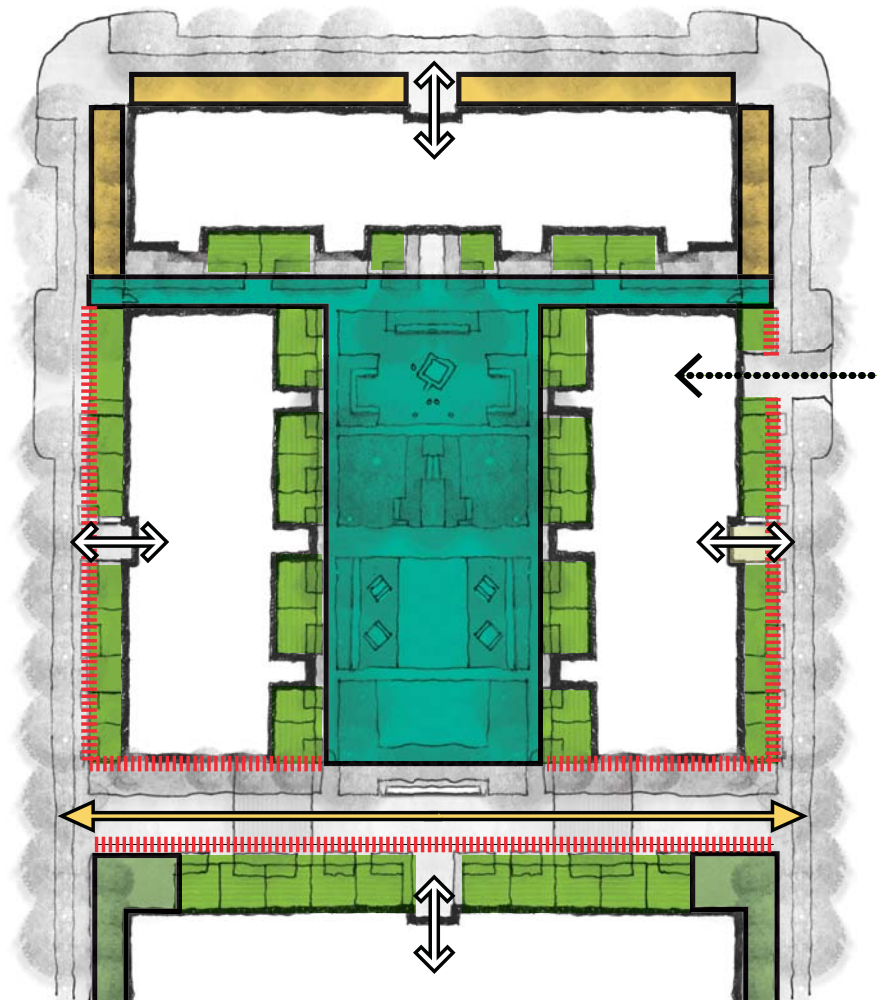
- be responsive to existing site conditions
- be considered at the start of the site planning and feasibility stage of the development to inform the placement of built form on site
- be located for maximum solar access
- be connected to the development and be an extension of internal living spaces
- use planting to manage the impact of high density development
- be flexible, to cater for the needs of a wide range of users
- be functional, with provision of a range of amenity items and opportunities for a variety of uses
- be clear and legible so users can move around the development with ease.



DOCUMENT REFERENCE:

Apartment Design Guide - June 2015

Sydney Development Control Plan 2012



Legend:


- | | |
|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
|  Common Open Space (refer C3) |  Public / Private Landscape Interface (refer C3) |
|  Private Courtyards (refer C3) |  Setback for Commercial/Retail |
|  Through-site Link (refer C3) |  Primary Building Entries |
|  Setbacks |  Vehicular Entry |

Figure 12:
Example layout of a residential flat and mixed use developments indicating the possible location of a range of landscape spatial types, circulation and entry points

C3 LANDSCAPE SPACES

COMMUNAL OPEN SPACE

Communal open space acts as an extension of the building's living space, offering flexible opportunities for passive and active recreation for residents. Communal open space should provide gathering spaces with amenity for entertaining and play, open space for recreation, good solar access, natural ventilation and deep soil areas for significant tree and mass planting. Communal open space may be located on podiums and accessible rooftops.

PRIMARY GUIDANCE

Demonstrate that you have provided a high amenity, usable and flexible communal open space that caters for the needs of a variety of user groups.

Communal open spaces should be:

- functional, with appropriate provision of amenity for both residents and visitors
- attractive spaces that are well designed and comfortable
- sunny and well ventilated
- clearly delineated from public areas
- accessible to all user groups with secure private access
- flexible, providing a variety of interesting spaces for residents to use.

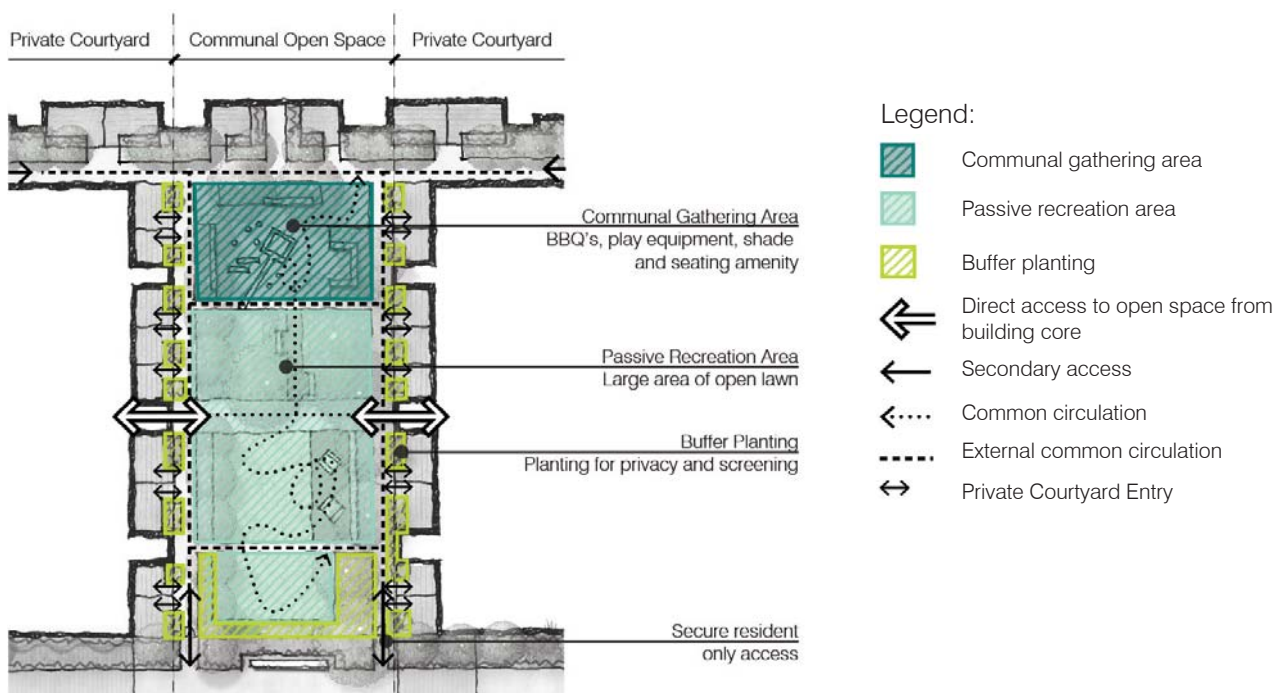


Figure 13: Example layout of communal open spaces indicating possible configuration of suggested landscape features



DOCUMENT REFERENCE:

Apartment Design Guide - June 2015

Sydney Development Control Plan 2012

PRIVATE OPEN SPACE

Private open space is an external area intended for the sole use of tenants of an individual unit. It can be in the form of a courtyard, deck, terrace or balcony. Private open space should be integrally connected to the apartment's main living spaces, functioning as an extension of internal living areas. Private courtyard spaces adjacent to communal spaces must have a high level of privacy, while maintaining opportunities for visual connection and outlook to adjacent spaces. Private open spaces can often have a direct relationship with the public domain but should be clearly defined as private. Most spaces that are not part of the primary, communal open space should be designed as usable private open space.

PRIMARY GUIDANCE

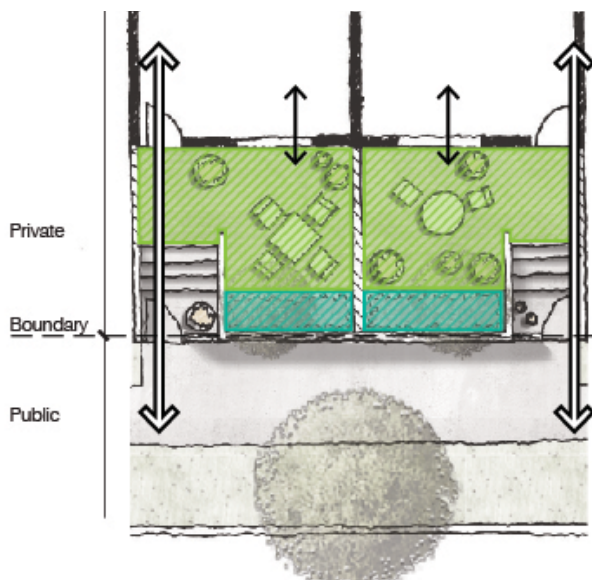
Demonstrate that your proposal has incorporated meaningful and functional private open spaces.

Private open spaces should be:

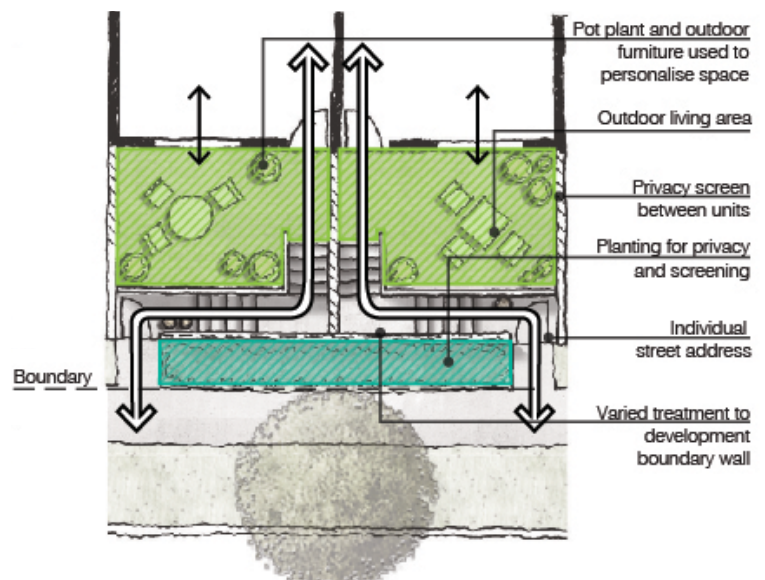
- functional, with provision of generous space for residents
- integrated and connected to living spaces
- screened from the public domain whilst providing some visual links for safety for a person standing in the space (sometimes referred to as “eyes on the street”).

Considerations:

- Consider setting back balconies above private courtyards to maximise sunlight and solar access.
- Ensure that planting used in landscape spaces responds and contributes to the street and public domain character.
- Allow opportunities for personalisation of spaces to reinforce the residential nature of the street.
- Ensure private courtyards have enough space to locate functional features such as tables and chairs.



Example courtyard with small level change



Example courtyard with large level change

Legend:

- Outdoor living space
- Planting for privacy and screening
- Clear entry to front door
- Direct access between outdoor and indoor living spaces



DOCUMENT REFERENCE:

Apartment Design Guide - June 2015
Sydney Development Control Plan 2012

Figure 14: Example layout of private open space illustrating different treatments of the interface between courtyards and the public domain

PRIVATE OPEN SPACE FRONTING THE STREET

Development frontages form the interface between the public and private domain. The design of these frontages will affect the visual and physical quality of your development, its presence on the street, its contribution to street activation and passive surveillance and the quality of the public domain. The design of this interface and the private landscapes that adjoin it must address the development's relationship with the street including surveillance, overlooking and privacy.

PRIMARY GUIDANCE

Demonstrate how you have designed development frontages to complement and connect the private and public domain and comply with the street interface guides 1-3 on page 55.

Private open space fronting the street should:

- make the street an active, green and safe place
- enable comfortable, functional and safe private courtyards that are well connected to the public domain (physically and visually)
- help integrate buildings with the streetscape and landscape setting.

Considerations for streetscape:

- Frontages should be designed to create variation and interest in the streetscape. Arrange structural elements such as retaining walls, stairs and balustrades in a way that creates depth and rhythm in the street.
- Ensure the threshold between private and public space is clearly defined. Fences and walls fronting the street at ground level must find a balance between defining the street edge, achieving variation in boundary treatments, enabling passive surveillance and providing privacy for residents. Use a range of materials and finishes to achieve variation. Avoid long stretches of blank walls and opaque balustrades, especially glass.
- The preferred arrangement for ground level dwellings facing the street is that they should be elevated by 0.8m or more and setback by at least 3m.
- Consider the way front gardens contribute to the street as a place. Hardy and low maintenance plant species are preferred in gardens that will not be maintained by strata.
- Celebrate the residential nature of the street through material selection. Use a variety of materials to increase variety, texture and interest.
- Ensure that boundary walls are not too high.

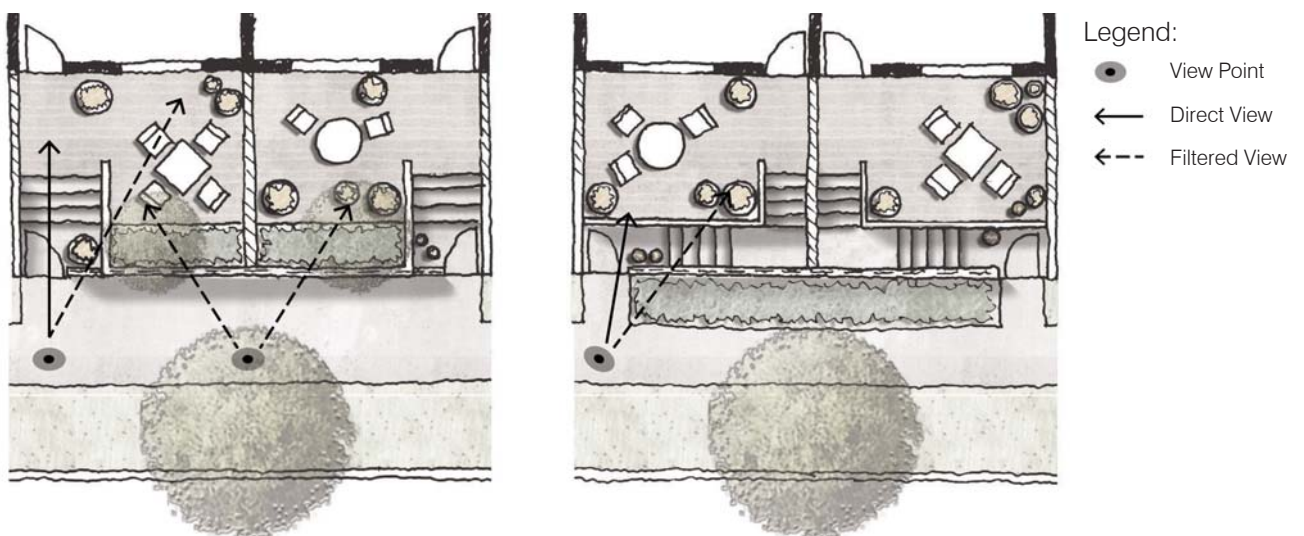


Figure 15: An example layout of private courtyards highlighting direct and filtered views

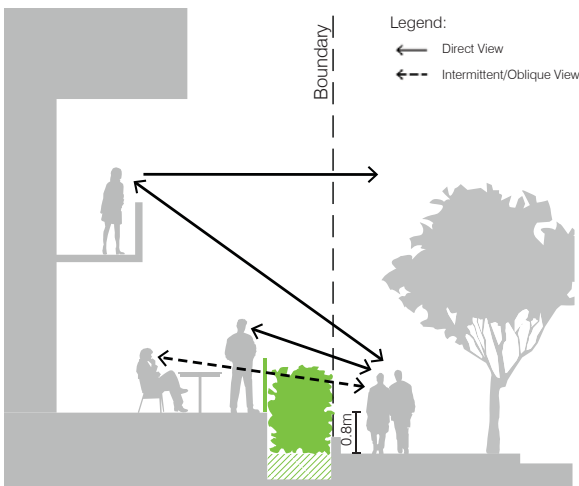

DOCUMENT REFERENCE:

Apartment Design Guide - June 2015
Sydney Development Control Plan 2012

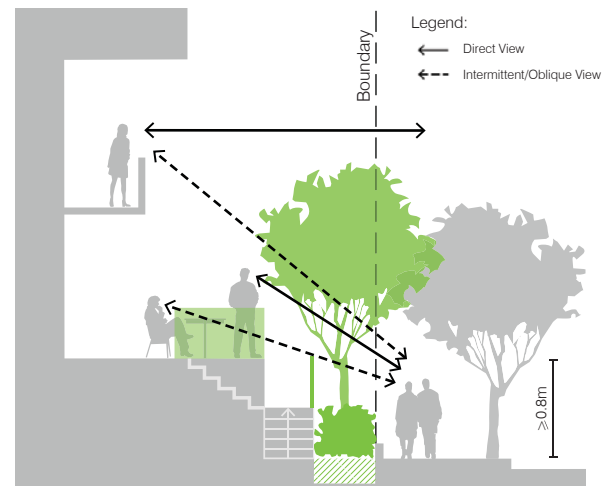
STREET INTERFACE GUIDES

Ensure that ground level living spaces and balconies are sufficiently private. In addition, maintain passive surveillance of the street by enabling intermittent views from the terrace when seated and direct views when standing.

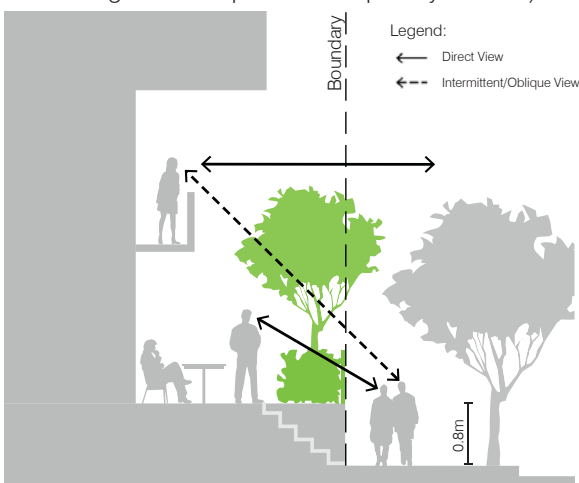
1. Elevate the ground floor and private open space by a minimum of 0.8m above the adjacent footpath.
2. Set back the ground floor by at least 3m from the property boundary and upper floors by at least 1.5m for the full height of the building, to provide daylight to a planted front garden.
3. Layer landscape features such as planting, fences, walls, stairs and balustrades to balance privacy with surveillance of the footpath. Provide:
 - a. direct views from the private open space to the adjacent footpath when standing
 - b. privacy with some oblique or intermittent views to the adjacent footpath when seated in the private open space to balance privacy and passive surveillance of the street
 - c. direct views from the front door to the adjacent footpath
 - d. offset and terraced walls, fences and balustrades with layers of landscape planting to avoid tall overbearing structures adjacent to the footpath (each solid element should not exceed 1.2m in height).



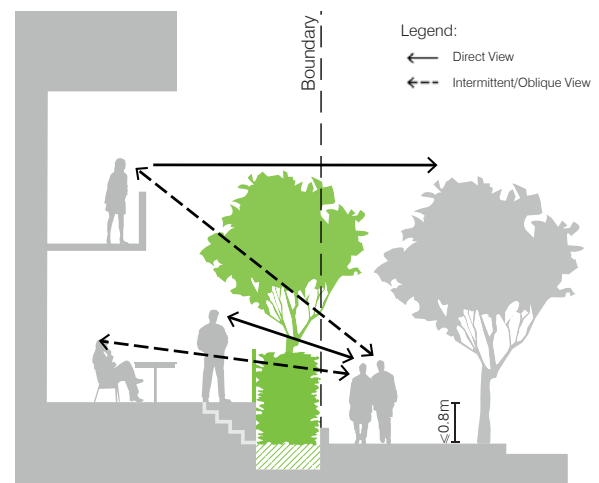
Landscape features such as planting, fencing, balustrades and walls can be used to manage sight lines between the public and private domain. (Less than 0.8m level changes are not preferred for privacy reasons).



Significant level changes should use planting at street level to screen high walls. Balustrade openness should manage privacy and passive surveillance.



Planting at courtyard level only will improve connections to the street and enable a greater visual exchange.



Planting at street level can help filter sight lines where level changes are minimal. (Less than 0.8m level changes are not preferred for privacy reasons).

Figure 16: Scenarios to manage sight lines between the public and private domain

INTERFACE BETWEEN PRIVATE AND INTERNAL COMMUNAL SPACES

The interface between private and internal communal spaces is important for managing the privacy of residential courtyards. It can influence the quality of both private and communal landscapes by providing a high level of visual connection whilst maintaining separation.

PRIMARY GUIDANCE

Demonstrate that you have designed the interface between private and communal open space to promote privacy and comfort for residents.

The interface between private open space and common spaces, including circulation, should:

- comply with the street interface guides 1-3 on page 55 where possible to ensure that a person seated in their private open space and living space is afforded privacy
- be clearly defined so there is a distinction between private and communal areas
- where common space or circulation is lower than private open space, maintain visual links to communal space when standing and privacy when seated
- where common space or circulation is at grade with private open space, be fenced to a height of 1.8m to provide privacy and security with planting to screen the fence.

Considerations:

- Consider how different plant species can create filtered screens.
- Use planting in raised planters to create a visual and physical separation between private and communal space.
- Provide semi-permeable screens to private courtyards to improve privacy. Permeable screens on top of walls can also improve solar access.

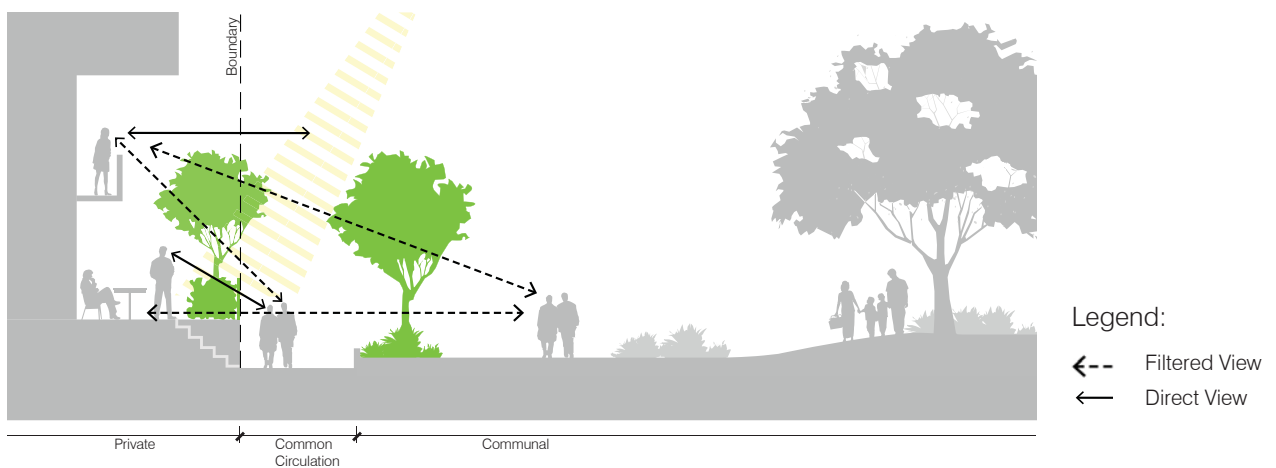


Figure 17: Elevated ground floor and trees can help restrict and filter views between private and communal space

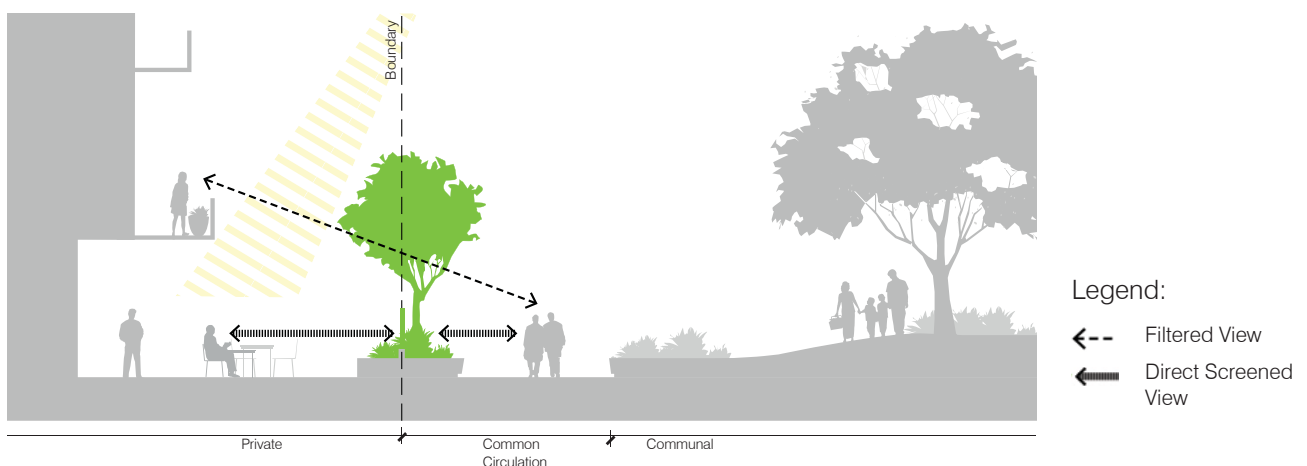


Figure 18: Fencing, raised planters and trees can help restrict and filter views between private and communal space

THROUGH-SITE LINKS

Through-site links are pedestrian and bike connections linking public spaces (streets) across private land. Through-site links improve the permeability of blocks and increase the potential for direct and clear connections. Amenity like seating and shade provided in the through-site link can encourage use by pedestrians.

The minimum required location of through-site links is determined by the SDCP.

PRIMARY GUIDANCE

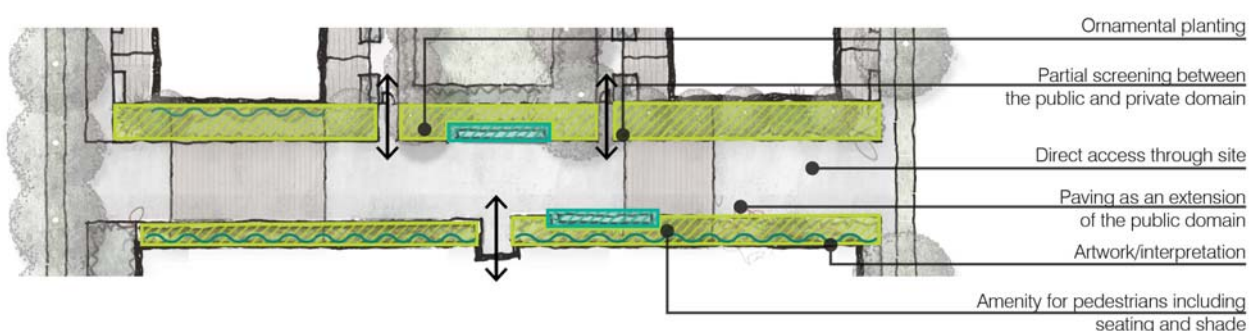
Demonstrate how you have designed the through-site link as a clear, unambiguously public pedestrian space and how you have managed safety, security and privacy.

Through-site links should:

- have a public character with high levels of amenity
- be safe, well lit, highly accessible and an extension of the public domain
- provide clear and legible entry points that are inviting, direct and clearly public
- provide direct access with ample width and clear sight lines between the public and private domain as well as from one end to the other end
- consider placement of elements such as walls and planting to minimise obstruction of sight lines through the space
- consider placement of windows, doors and verandahs of adjacent buildings to directly front the through site link at ground level
- provide direct, accessible at grade connections to adjacent streets
- be accessible 24 hours a day
- be completely open to the sky.

Considerations:

- Use landscape, artwork and other features to lead people through the space and create visual interest within the landscape.
- Provide direct access and a clear line of sight between each end of the through-site link.
- Use materials (paving, planting and furniture) that clearly define the through-site link as a public space.



Legend:

- ↔ Pedestrian link
- Pedestrian amenity
- Planting for privacy and screening

Figure 19: Example layout of a through-site link illustrating elements that help draw people through the space while maintaining privacy to adjacent properties



DOCUMENT REFERENCE:

Sydney Development Control Plan 2012

Commercial and Industrial

PART D

PART D



Image 10: Bourke Street, Alexandria

Commercial and Industrial

Commercial and industrial developments include areas used for businesses such as office buildings, bulky goods, retail outlets, display centers, service stations, cafes, retail uses, shopfronts, restaurants, warehouses, factories and industrial units.

Commercial and industrial developments are places of work and recreation. They are often places of high activity and accommodate a variety of user groups. Through jobs provision, commercial and industrial land use is a vital component in sustaining the social and economic sustainability of the city.

Commercial and industrial developments are typically characterised by large scale buildings with a high proportion of built site coverage, large surface car parks and hard paving. Within the City center, commercial developments are often high rise office towers with 100 percent site coverage and limited opportunities for landscape on private land.

Landscape proposals must be responsive and sensitive to local environmental conditions and seek to improve biodiversity, water quality and the natural landscape. Landscape should aim to reduce the perceived scale and bulk of the building and the overall visual impact of the development on the public domain and neighbouring properties.



Image 11: Rouse Hill

D1 PRIMARY GUIDANCE: COMMERCIAL AND INDUSTRIAL DEVELOPMENTS

This checklist is the specific design guidance to be addressed in the Statement of Environmental Effects for all commercial and industrial developments.

Refer to Part A6 for the DA Checklist for all developments.

Refer to Volume 1 of the code for Single Dwelling Landscape Design Guidance.

Demonstrate that your design has achieved the following:



1. Site Planning



- a. Site planning, design and circulation: incorporate a range of integrated, functional and well connected landscape spaces that address environmental and social requirements



2. Landscape Spaces



- a. Private open space: integrate flexible and accessible private open space



- b. Surface car parks: design surface car parks that are environmentally sensitive, safe and functional.



3. Landscape Design Requirements



- a. Read and responded to the guidance in **Part B** of this document.

D3 SITE PLANNING

SITE PLANNING, DESIGN AND CIRCULATION

Commercial and industrial developments are comprised of different landscape spaces and movement requirements. These include private open space, setbacks and surface car parks. Each of these spaces should be well defined to minimise the safety risk between various site users (such as pedestrians, cyclists and vehicles), to be generously sized to cater for the needs of workers and visitors, to help increase the permeability of the site and to reduce the perceived bulk of the building.

PRIMARY GUIDANCE

Demonstrate that you have incorporated a range of integrated, functional and well connected landscape spaces into your site and have addressed environmental and social requirements of your development.

Commercial and industrial landscapes should:

- be integrated, contained and connected to the development to improve convenience for workers and visitors
- be responsive to existing site conditions to ensure a site specific outcome
- utilise planting to mitigate the scale of development
- be functional with provision of a range of amenity opportunities catering for all user groups
- be safe for all users.



DOCUMENT REFERENCE:

Sydney Development Control Plan 2012

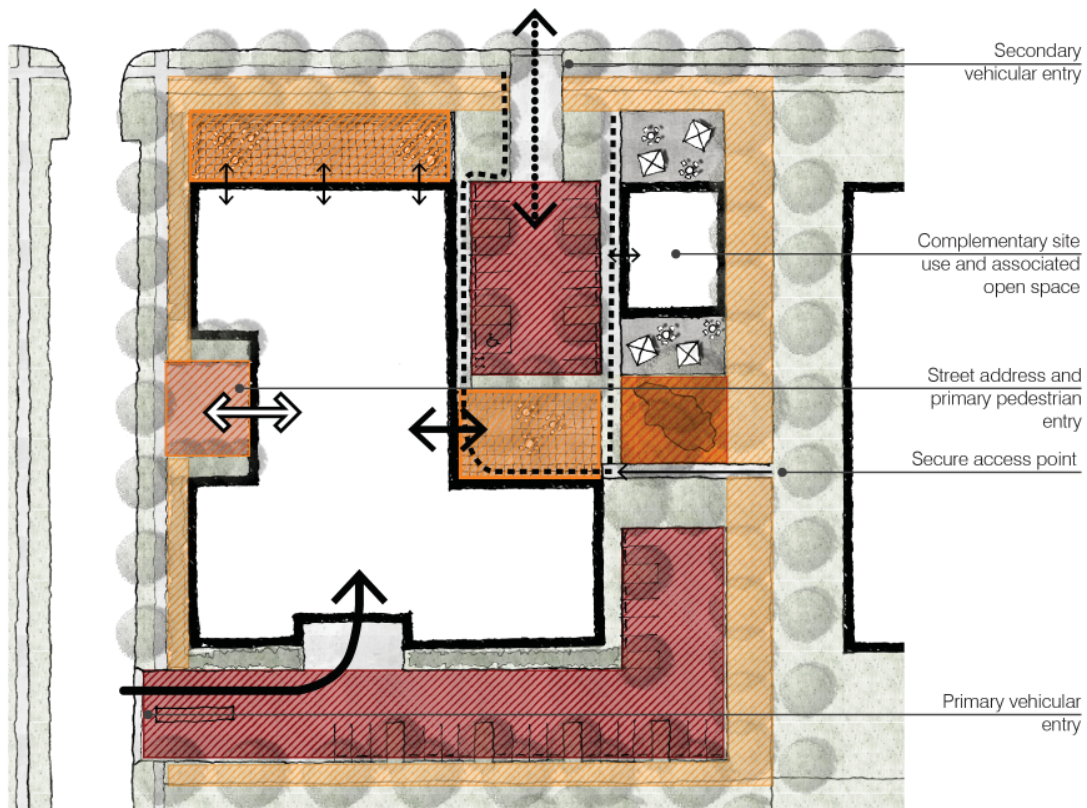


Figure 19: Example layout of a commercial development indicating possible location of a range of landscape spatial types, circulation and entry points

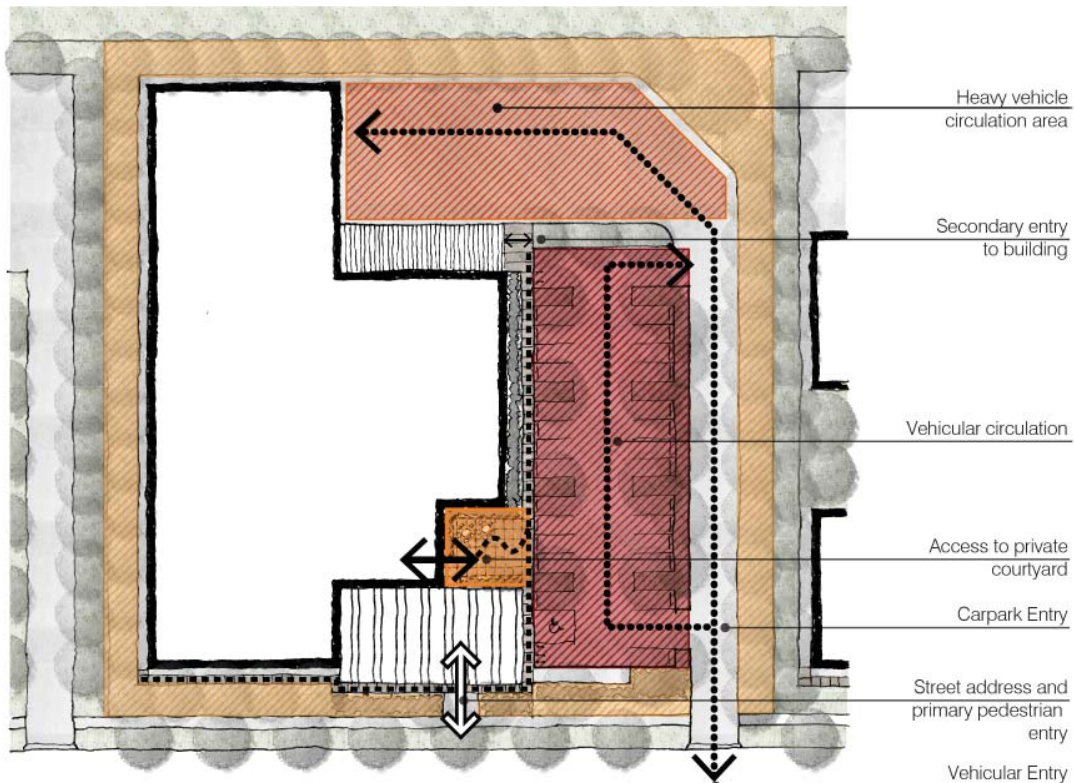


Figure 20: Example layout of an industrial development indicating possible location of a range of landscape spaces, circulation and entry points

D4 LANDSCAPE SPACES

PRIVATE OPEN SPACE

External courtyard areas are for the use of both workers and visitors and provide important outdoor breakout spaces and amenity for the development. A private open space should be appropriately scaled for the size of the development and the number of people likely to use it. It should be connected to the building and have direct access from primary working areas.

PRIMARY GUIDANCE

Demonstrate how you have integrated flexible and accessible private open space within your development.

Private open spaces should be:

- functional, with provision of generous and varied spaces for workers and visitors
- located to maximise direct sunlight
- integrated and connected to the building, in particular areas where people work
- diverse, catering for a range of users and uses e.g. smokers, separated from people eating and relaxing.



Image 12: Example of private open space that provides gathering areas with significant planting and amenities for workers

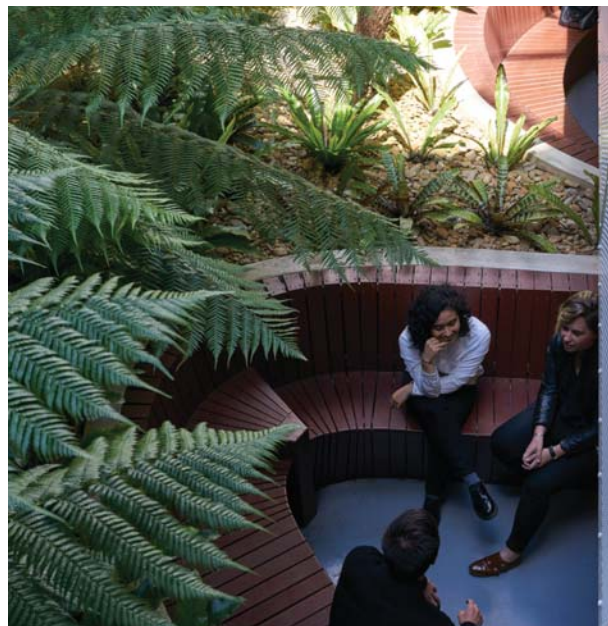


Image 13: Example of private open space that can be viewed upon from within the building and provides a space for workers to relax

SURFACE CAR PARKS

Surface car parks must be functional yet environmentally sensitive. They must offer safe pedestrian circulation and access options for a variety of users. Car parks should not visually dominate the development. They must incorporate large trees and diverse understorey planting and promote the use of permeable surfaces for water sensitive urban design principles.

PRIMARY GUIDANCE

Demonstrate that your surface car park is environmentally sensitive, safe and functional.

Incorporate regular tree planting and extensive canopy cover, as per the SDCP.

Surface car parks should:

- minimise runoff into surrounding storm water systems by enhancing permeable surfaces
- minimise the urban heat island effect by introducing tree and mass planting and considering material choices
- provide clear and safe pedestrian, vehicular and bike circulation.

Considerations:

- ensure planting doesn't obscure sight lines
- provide convenient, safe and logical paths for pedestrians, bike riders and vehicles, avoiding conflict between the different modes
- provide clear entries in and out of the car park
- ensure the carpark surface material selection complements the landscape palette.

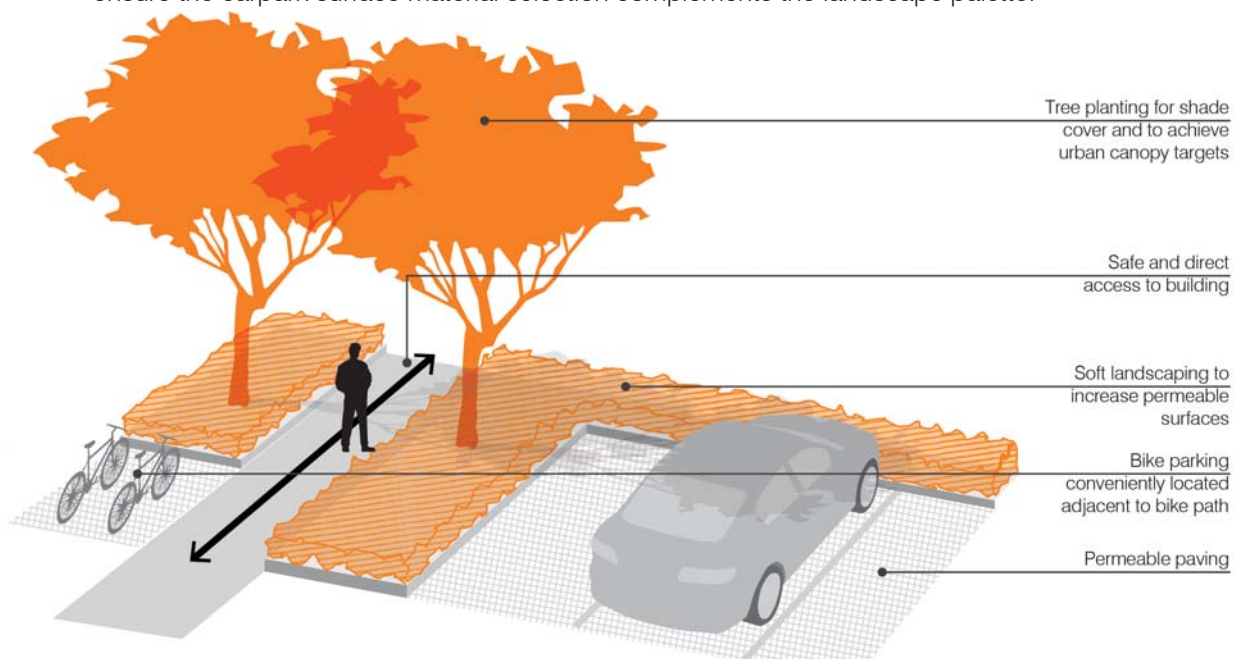


Figure 21: Example configuration of a car park bay showing suggested landscape features



DOCUMENT REFERENCE:

Sydney Development Control Plan 2012
 Greening Sydney Plan 2012
 City of Sydney Urban Forest Strategy 2013
 City of Sydney Urban Ecology Strategic Action Plan 2014
 City of Sydney Decentralised Water Master Plan 2012-2030

Glossary

PART E



Image 14: The Village, Balgowlah

Glossary of Terms

Amenity the 'livability' or quality of a place which makes it pleasant and agreeable to be in for individuals and the community. Amenity is important in both the public and private domain and includes the enjoyment of sunlight, views, privacy and quiet (NSW Multi-Unit Residential Design Code 2002).

Arborist refers to a qualified and experienced practitioner with a minimum AQF 5 (refer to Arboriculture Australia website).

AS 1158 Australian Standard 1158: Lighting for Roads and Pedestrian Spaces Series.

AS 1428 Australian Standard 1428: Design for Access and Mobility Series.

Australian Standards can be accessed at any City of Sydney library. Just ask the Librarian and they will show you how.

BCA means Building Code of Australia.

Building line the line formed by the main external face of the building, excluding any balcony or bay window projections (NSW Multi-Unit Residential Design Code 2002).

Communal open space also known as **common open space** is a usable community open space for the recreation and relaxation of residents which is under the control of a body corporate.

CPTED means crime prevention through environmental design.

SDCP means Sydney Development Control Plan 2012.

Deep soil is an area of natural ground with a relatively natural soil profile. It excludes areas where there is a structure underneath, as well as pools and non-permeable paved areas. However, it can include 50% of the area of any porous paving and essential accessible paths up to 1.2m wide, providing there is deep soil area to one side that is level with the footpath.

Endemic plants a plant species occurring at a place within its historically known natural range and forming part of the natural biological diversity of a place (NSW Multi-Unit Residential Design Code 2002).

Green roof means a roof system designed to promote the growth of various forms of vegetation on the top of buildings. Differing from a roof garden, a green roof can also support various forms of renewable energy and water collection technology to assist in supplying power and water to the occupants of the building.

LGA refers to Local Government Area.

Planting Design refers to the physical arrangement of plant species within a garden bed or site. Planting design means that the garden beds and plants within them are considered as whole elements.

Private courtyard refers to private open space which may be on a structure (i.e. podium, parking deck) or at ground level (NSW Multi-Unit Residential Design Code 2002).

Private open space refers to an open area of land or building attached to a dwelling intended for the exclusive use of occupants of the dwelling for private outdoor living activities.

Public domain refers to areas of the City in which access to and use of is available for any member of the public. Public domain typically includes parks, plazas, footpaths and streets. Public domain elements of the City are typically controlled by the City of Sydney.

Setback Setbacks are the distance which a building is offset from the boundary

Sight line is a line extending from an observer's eye to a viewed object.

Site planning is the process of arranging built and unbuilt elements on a site to accommodate a chosen function, program and design outcome.

Soft Landscape refers to planted or grassed areas with a permeable finished ground surface.

Sustainable Source refers to forestry products that are environmentally appropriate, socially beneficial and economically viable. "Environmentally appropriate forest management ensures that the harvest of timber and non-timber products maintains the forest's biodiversity, productivity and ecological processes." (Forestry Stewardship Council)

Sydney LEP means Sydney Local Environmental Plan 2012.

A through-site link is a pedestrian and bike path that connects two public access ways across a site. They improve permeability, help break up large street blocks and increase the potential for direct and clear connections between buildings.

Universally accessible in the context of the landscape means that an access way complies with the provisions of AS 1428: Design for Access and Mobility. This standard is referenced in the Building Code of Australia and aims to ensure that all people can use an access way regardless of their degree of mobility.

Urban canopy refers to all trees located throughout the local government area.

Urban ecology (or biodiversity) refers to living things that inhabit urban areas and the ecosystems they form.

Urban island heat effect is an urban area having higher average temperature than its rural surroundings owing to the greater absorption, retention, and generation of heat by its buildings, pavements, and human activities.

Water Sensitive Urban Design means the integration of urban planning with the management, protection and conservation of the urban water cycle so as to ensure urban water management is sensitive to natural hydrological and ecological processes. It may include practices such as storm water reuse, use of bio-retention swales and detention ponds.

Wayfinding a term used to describe the ease of navigating through a landscape with the aim of reaching a pre-selected destination.

WSUD means Water Sensitive Urban Design.

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References

PART F

PART F



Image 15: Moore Park Gardens, Sydney

References

Cover Image: Aspect OCULUS One Central Park. Photo by Simon Wood

Image 1: OCULUS Trio, Sydney. Photo by Oculus

Image 2: Aspect OCULUS One Central Park. Photo by Simon Wood

Image 3: Photo by OCULUS 06.05.16

Image 4: OCULUS The Village, Balgowlah. Photo by Simon Wood

Image 5: OCULUS The Village, Balgowlah. Photo by Simon Wood

Image 6: OCULUS The Village, Balgowlah. Photo by Simon Wood

Image 7: OCULUS Napier Street, Paddington. Photo by Simon Wood

Image 8: OCULUS The Village, Balgowlah .Photo by Simon Wood

Image 9: OCULUS New Acton Precinct, Canberra. Photo by Simon Patching

Image 10: Photo by Oculus 09.07.14

Image 11: OCULUS Rouse Hill Town Centre, Rouse Hill. Photo by Brett Boardman

Image 12: OCULUS Barangaroo South. Photo by Florian Groehn

Image 13: OCULUS Exo Apartments, Melbourne. Photo by Nils Koenning

Image 14: OCULUS The Village, Balgowlah .Photo by Simon Wood

Image 15: Photo by Oculus 06.05.16