

4.0 General Controls and Guidelines

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Source: Thomas Herzog 1998

Low energy consumption, self sustaining buildings that promote alternative green energy solutions.

4.1 Introduction

Section 4 sets out general planning controls and guidelines that apply to the entire Town Centre. These controls are to be read and applied in conjunction with the precinct controls in Section 5. They include:

- sustainability controls, including the required ratings for various building uses
- public domain controls for streets, parks and public spaces
- event controls
- land use and density controls
- building form and amenity controls
- access and parking controls
- transport strategies and infrastructure controls
- landscape and site controls
- community facilities controls.

A number of the control sections begin with a description of the main intention for the controls. Where relevant, control sections are illustrated with images of built projects demonstrating good practice.

The following related reports, policies and guidelines (and any subsequent versions*) provide additional information and are to be incorporated into development as relevant:

- Environmental Guidelines for Sydney Olympic Park 2008
- Sydney Olympic Park Major Event Impact Assessment Guidelines
- Sydney Olympic Park Access Guidelines (July 2015)
- Sydney Olympic Park Urban Elements Design Manual 2008
- Sydney Olympic Park Authority's Signage Policy
- Sydney Olympic Park Authority Report for Master Plan 2030 Street Concept Design
- Sydney Olympic Park 2030 Significant Tree Register
- Sydney Olympic Park Master Plan 2030 Noise Management Plan
- Sydney Olympic Park Master Plan 2030 Traffic and Transport Strategy (2018 Review)
- Community Facilities Strategy for Sydney Olympic Park Master Plan 2030 (2018 Review)
- Sydney Olympic Park Master Plan 2030 Urban Art Strategy (pending)
- Sydney Olympic Park Stormwater Management & Water Sensitive Urban Design Policy.



Source: Andrew McKenzie 2004

In conjunction with other sustainable initiatives, Chilled Beam systems can greatly reduce the operational costs of heating and cooling buildings.

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4.2 Sustainability

Sustainability is at the forefront of all decision making affecting building design and construction at Sydney Olympic Park. The Environmental Guidelines for Sydney Olympic Park 2008 provides a thorough framework for achieving this, combined with the following controls.

To implement the Sustainability Planning Principle (see Section 3.3) and promote affordable fully integrated sustainable design throughout the Town Centre:

4.2.1 Controls

1. Engage an Ecologically Sustainable Design (ESD) consultant as a core member of the project team.
2. Connect all new development to Sydney Olympic Park's recycled water system for all approved uses of recycled water, including:
 - toilet and urinal flushing
 - irrigation of the parklands and gardens
 - fountains and water features
 - playing fields
 - fire fighting
 - construction
 - wash down and dust suppression
 - clothes washing (supply to washing machine only)
 - commercial air conditioning water cooling towers.

Environmentally Sustainable Materials

3. Prioritise sustainable materials selection:
 - All Australian hardwood timber must be from certified sustainably managed plantation sources.
 - All fibreboard must be low emission medium density.
 - Use of fibreboard chlorine based products (including PVC) must be minimised.
 - Copper chrome and arsenic treated timber or imported native rainforest timber must not be used in any application (including formwork).

Required Ratings

4. All development is to achieve the minimum ratings set out in *Table 4.1 Environmental Ratings*. The Authority will be working towards certification of Green Star Communities (6 star) within Sydney Olympic Park. The required ratings will assist in delivery of this outcome.

Climate Change Adaptation

5. All future developments and project applications should consider the impacts as a result of climate change and include elements in building design and construction that specifically address these impacts consistent with the guidance provided in the Green Building Council of Australia *Green Star Design & As Built Guidelines*.

The Authority has commenced its risk assessment and will be developing a precinct Climate Change Adaptation Plan in line with the *Green Star Communities*.



Solar blinds between double glazing reduce heat loads while providing daylight and views.

Source: Christian Schittich 2004

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Table 4.1 Environmental Ratings

Development Type	Rating Scheme			
	Green Building Council of Australia	Additional Requirements		
	Version	Minimum Rating		
Commercial Office	Current version of: Green Star – Design & As Built	5 Star	New commercial and office buildings must also achieve a minimum 5.5 star NABERS Energy commitment.	
Commercial Office (Design Competition Site)	Current version of: Green Star – Design & As Built	6 Star	New commercial and office buildings must also achieve a minimum 5.5 star NABERS Energy commitment.	
Office Interiors	Current version of: Green Star – Interiors	5 Star		
Retail Centre	Current version of: Green Star – Design & As Built	4 Star	New retail centres must also achieve a minimum 5 star NABERS Energy commitment	
Retail Centre (Design competition Site)	Current version of: Green Star – Design & As Built	6 Star	New retail centres must also achieve a minimum 5 star NABERS Energy commitment	
Public Buildings	Current version of: Green Star – Design & As Built	4 Star		
Healthcare	Current version of: Green Star – Design & As Built	4 Star		
Educational	Current version of: Green Star – Design & As Built	4 Star		
Mixed Use Developments	Current version of: Green Star – Design & As Built	4 Star		
Hotels	Current version of: Green Star – Design & As Built	4 Star	New hotels must also achieve a minimum 5 star NABERS Energy commitment.	
Hotel (Design Competition Site)	Current version of: Green Star – Design & As Built	6 Star	New hotels must also achieve a minimum 5 star NABERS Energy commitment.	
Residential	Current version of: Green Star – Design & As Built	4 Star	New residential buildings must also achieve minimum BASIX targets of:	
			BASIX Energy	Minimum Target
			Single dwelling (detached and semi-detached)	60
			Low density (2-3 storeys)	55
			Medium density (4-5 storeys)	50
			High density (6+ storeys)	40
			BASIX Water	Minimum Target
All new dwellings	60			
Residential (Design Competition Site)	Current version of: Green Star – Design & As Built	6 Star	New residential buildings must also achieve minimum BASIX targets of:	
			BASIX Energy	Minimum Target
			Single dwelling (detached and semi-detached)	60
			Low density (2-3 storeys)	55
			Medium density (4-5 storeys)	50
			High density (6+ storeys)	40
			BASIX Water	Minimum Target
All new dwellings	60			

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4.3 Public Domain

To implement the Public Domain Planning Principle (see Section 3.5) with a high standard of urban design and amenity and promote lively, popular and safe streets and public spaces. This section applies to all publicly accessible open spaces irrespective of land ownership or tenure.

4.3.1 Controls

1. Set aside the land for streets, parks, through-site links and public spaces as shown in the site boundaries plan for the relevant precinct. Land dedicated for public purposes is to be vested in Sydney Olympic Park Authority.
2. Design and build streets and public spaces in accordance with the street sections and plans in *Appendix C* and:
 - Sydney Olympic Park Urban Elements Design Manual 2008
 - Sydney Olympic Park Authority Report for Master Plan 2030 Street Concept Designs
 - Sydney Olympic Park Access Guidelines (July 2015) and any subsequent version
 - Sydney Olympic Park Master Plan 2030 Traffic and Transport Strategy (2018 Review)
 - NSW Government – Planning Guidelines for Walking and Cycling 2004
 - all relevant codes and standards including:
 - AS 1428.1 – 2009: Design for access and mobility – General requirements for access – New Building Work.
 - AS 1428.2 – 1992: Design for access and mobility – Enhanced and additional requirements – Buildings and facilities
 - AS/NZS 1428.4.1 – 2009: Design for access and mobility - Means to assist the orientation of people with vision impairment - Tactile ground surface indicators
 - AS 2890.3 – 2015 Parking Facilities – Bicycle Parking.

Footpaths and the Pedestrian Environment

3. Provide a continuous and accessible pedestrian network within streets, public spaces and parks as shown in *Figure 3.6 Street Hierarchy*.
4. Design intersections and pedestrian crossings to favour pedestrian convenience and safety with particular attention to:
 - reducing the width and number of vehicle crossings
 - providing pedestrian crossings at every arm of an intersection
 - minimising kerb radii to ensure that kerb ramps are in line with the crossing path.
5. Connect to the local and regional pedestrian network as shown in *Figure 3.6 Street Hierarchy*:
 - create new pedestrian connections linking the Town Centre to eastern Bicentennial Park at Bennelong Parkway and new streets in the Parkview Precinct



Source: Jan Gehl and Lars Gemzoe 2001

Appropriate tree planting improves the amenity and ambience of streets and public spaces.



Source: Sydney Olympic Park Authority 2007

High quality and well defined streetscapes encourage pedestrian and cycle friendly streets.

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Source: Peter Reed 2005

Informal landscaped through site spaces provides alternate resting and meeting places between destinations.

- create new pedestrian connections linking the Town Centre to northern Bicentennial Park at Kevin Coombs Avenue Gate 8
- create new pedestrian connections linking the Town Centre to the Wentworth Point foreshore at Bennelong Parkway
- create new bridge connections to link adjacent precincts across rail and high traffic street corridors.

Amenity

6. Ensure paved footpaths on public streets are a minimum of 1.8m wide to allow pedestrians to walk three abreast and wheelchairs to pass two abreast.
7. Use the standards for furniture and lighting set out in the Sydney Olympic Park Urban Elements Design Manual 2008.
8. Use the standards for signage set out in the Sydney Olympic Park Urban Elements Design Manual 2008 and Sydney Olympic Park Authority's Signage Policy.

Solar Access

9. Building heights and setbacks should be configured to ensure that the urban domain affected by the proposed development receives a daily minimum of two hours of direct sunlight between 9.00am and 3.00pm on 30 June. Public parks should receive a minimum of two hours of direct sunlight between 9.00am and 3.00pm on 30 June for at least 30% of the park.

Building Interface with the Public Domain

10. Provide weather protection at communal entrances.
11. Maximise surveillance of the public domain and views of the public areas from the building.

Retail and Active Frontages

Frontages that attract pedestrians and contribute to the liveliness and activation of the Town Centre:

12. Activate ground floor levels with retail uses as shown in *Figure 4.1 Active Frontages Plan*. Active frontages will positively promote activation of streets and parks through physical and visual connections between inside areas and the public domain.

Primary Retail Frontages and Themed Retail Frontages are to:

- Provide for uses such as retail, customer service areas, cafes, restaurants as well as outdoor dining and other uses that achieve pedestrian interest and interaction
- Maximise display windows, transparent glazing to at least 70% of the frontage, particularly at corners
- Maximise entries, ideally one every 8 to 10m of the frontages
- Provide for either double height or two levels of active uses
- Restrict commercial building lobbies to no more than 20% of the frontage
- Restrict residential building lobbies to no more than 10% of the frontage

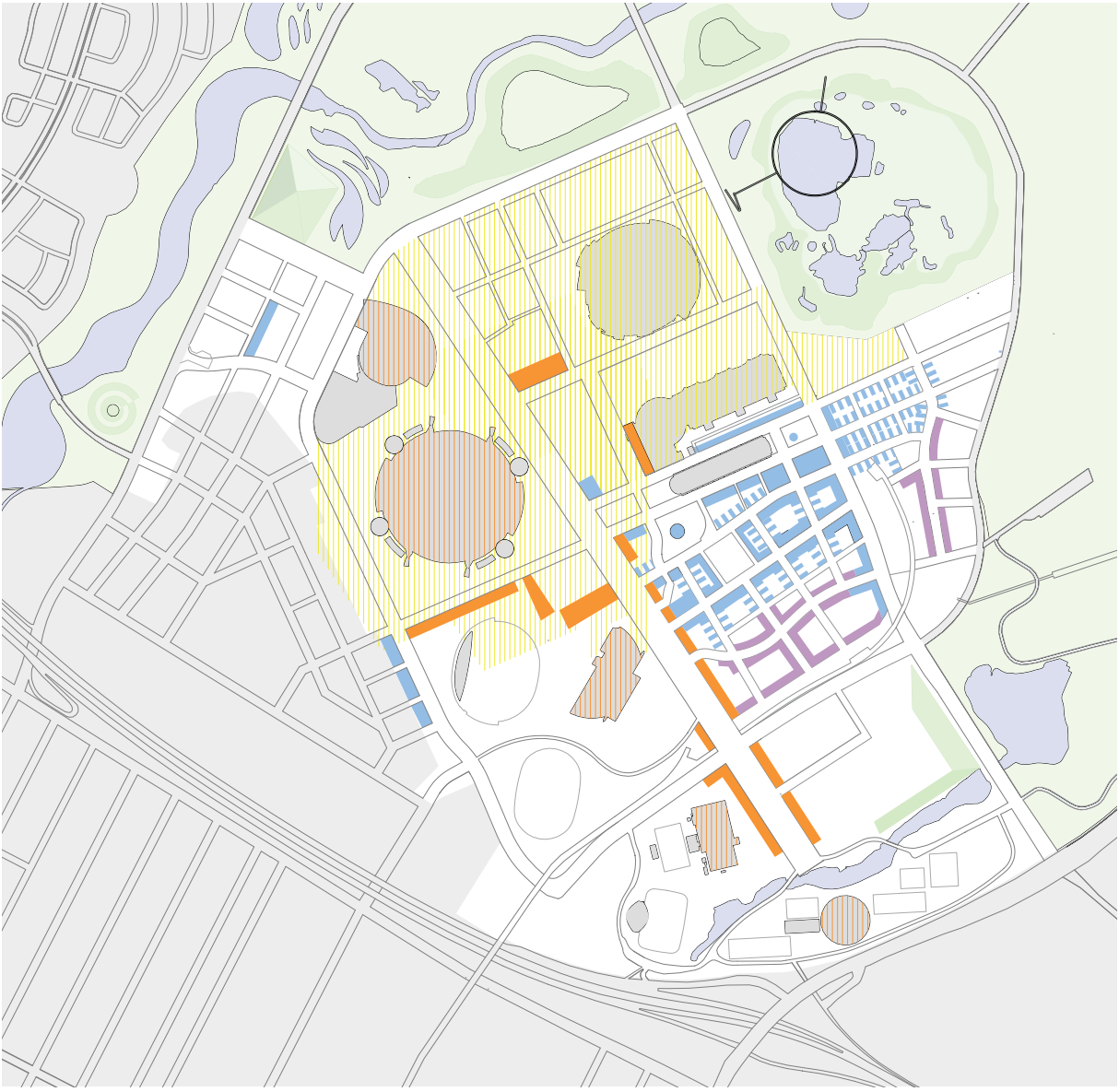


Source: Sydney Olympic Park Authority 2009


Ground floor spill out spaces adds vitality and animation to the street edge, encouraging safer and more visually engaging spaces.


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Figure 4.1 Active Frontages Plan





Key

-  Primary Retail Frontages and double height active frontage (Mandatory), minimum 90% of the frontage. Double height lobbies can occupy up to 20%

 Themed Retail Uses, minimum double height active frontage

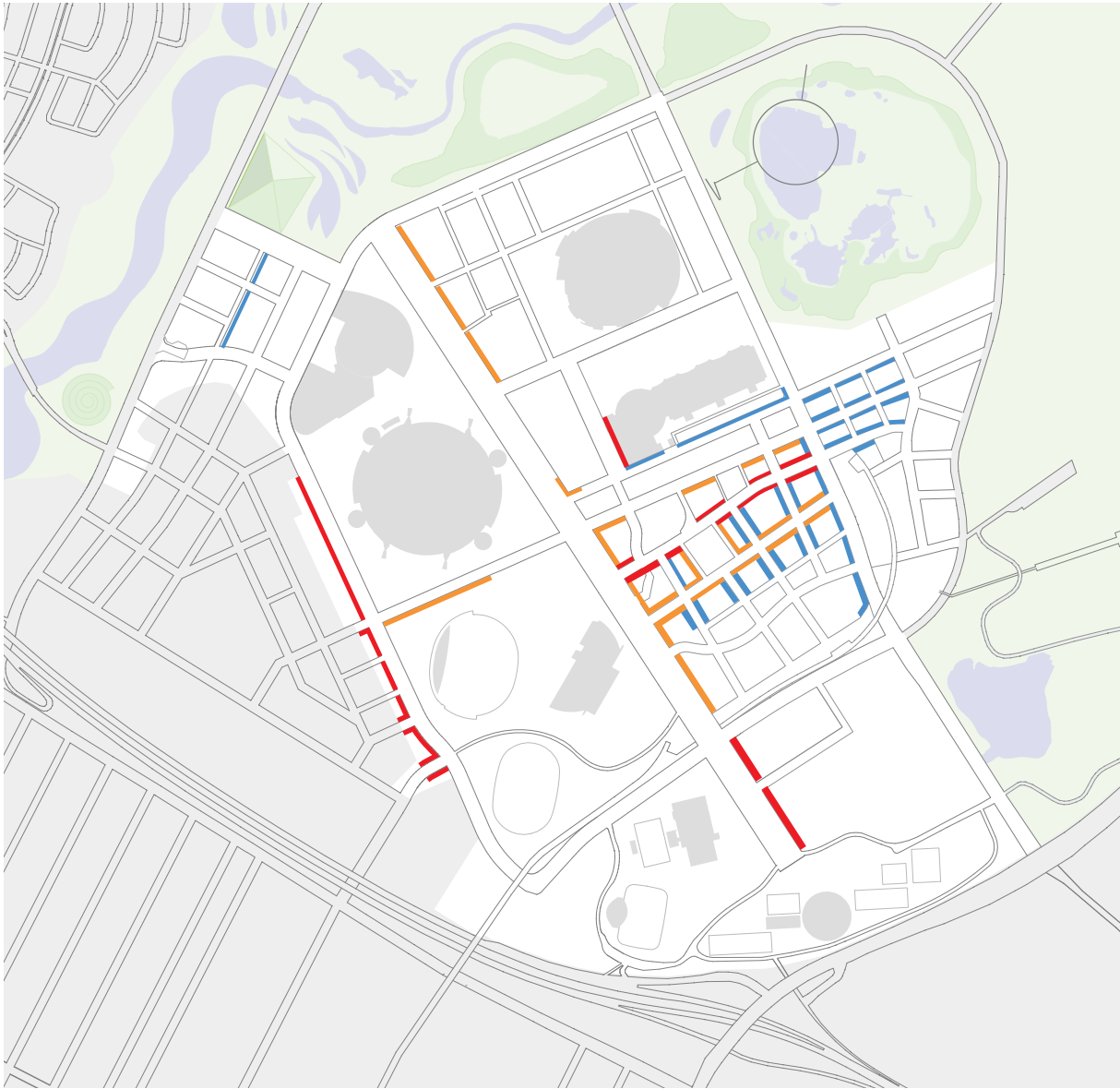
 Themed Retail Component Allowed within Venue
-  Special Event Retail Zone

 Secondary Active frontages, minimum 75% of the frontage. Lobbies can occupy up to 50% (Preferred frontage for lobbies)





 Residential Address/ Primary Pedestrian Access

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Figure 4.2 Awnings and Colonnades Plan



Key

-  Street Colonnade 2 Storey (minimum 8m high and 5m wide or to match existing)
-  Street Colonnade 1 Storey (minimum 4.2m high)
-  Awning
-  No Awning or Colonnade required

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- Restrict blank walls, service, plant and equipment hatches to no more than 10% of these frontages
- Driveways and service entries are to be located away from primary retail frontages.

Secondary Active Frontages are to:

- Provide for uses such as retail, customer service areas, cafes, restaurants as well as outdoor dining, commercial, hotel and residential lobbies, customer service uses associated with commercial and hotel lobbies and other uses that achieve pedestrian interest and interaction
- Provide for display windows, transparent glazing to at least 50% of the frontage particularly at corner locations
- Maximise pedestrian entries
- Commercial building lobbies up to 80% of the frontage
- Residential building lobbies up to 50% of the frontage
- Restrict blank walls, service, plant and equipment hatches to no more than 30% of these frontages.

Primary Residential Frontages are to:

- Positively contribute to the amenity and security of streets and parks by achieving physical and visual connections between the interiors of buildings, garden areas and the public domain
- Provide for uses such as residential lobbies, SOHO units, ground floor apartment terraces, communal and private gardens and courtyards, gates and doors into private and communal garden areas and other uses that achieve visual surveillance over the public domain
- Provide direct pedestrian access for ground floor apartments to the street or park and private gardens to enhance visual interest and activity along the street or park
- Provide building entries, lobbies and the primary address for buildings from these frontages
- Restrict blank walls, service, plant and equipment hatches to no more than 10% of these frontages
- Driveways and service entries are ideally located away from primary residential frontages but should be restricted to no more than 20% of these frontages.

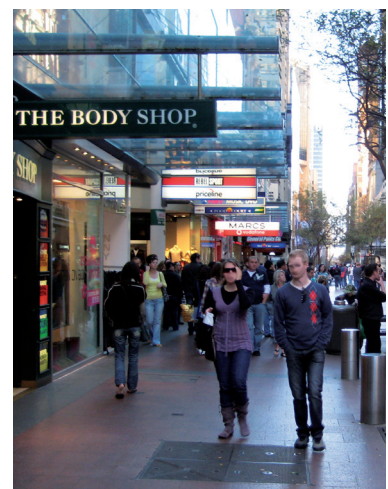
13. On Primary Retail, Secondary Active and Themed Retail Frontages ensure shops and food outlets have a display window measuring at least 5m. (*Figure 4.1 Active Frontages Plan*). Food outlet counters should be within the shop area as queuing on footpaths and public thoroughfares affects pedestrian amenity. Street corners for at least 3m along each frontage are to have display windows and/or doors.

14. Divide large facades into smaller sections to modulate the street frontage and ensure architectural detailing incorporates good materials and details of interest to pedestrians.



Source: Sydney Olympic Park Authority 2015

Double height active frontages provide a well proportioned base to larger buildings, whilst also contributing to active and vibrant Town Centre streets.



Source: Sydney Olympic Park Authority 2007

Coordinated awnings shelter pedestrians and visually frame ground floor uses.

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Source: Sydney Olympic Park Authority 2009



Well placed seating improves the amenity and casual surveillance of the public domain.

Source: Jan Gehl and Lars Gemzoe 2001



Public domain elements designed for informal seating increase the liveliness of a space.

15. Primary retail frontages are to have double height frontages.
16. Glaze ground floor windows and doors for retail uses with clear glass and provide good lighting at night.
17. Where security grilles are desired they are to be mounted internally and provide good visibility to shop displays (preferably set to the rear of the window display zones). Roller shutters are not permitted.
18. Commercial outdoor seating to support food and beverage outlets is encouraged to activate the public domain. This will require a separate consent and in all cases pedestrian circulation and amenity will take priority over outdoor seating.
19. Ground floor tenancies and building entry lobbies are to:
 - Have entries at the same level as the adjacent footpath or public domain
 - Have finished floor levels between 0-1m above or below the adjacent footpath or public domain.

Colonnades

To provide continuous shelter for pedestrians along primary streets:

20. Provide street colonnades to the full extent of the street frontage of buildings in the locations nominated in *Figure 4.2 Awnings and Colonnades Plan*.
21. Design colonnades to be well proportioned, high quality public domain elements that reflect the building's architecture and are visually integrated with adjoining colonnades.
22. The colonnade floor is to align with the adjoining external ground levels of the footpath, courtyard or public space. Paving finishes should also match.
23. The colonnade width is to be well proportioned and in accordance with *Figure 4.2 Awnings and Colonnades Plan*.
24. For continuity, the height and depth to the colonnade soffit is to be consistent along entire blocks and across lots.
25. Colonnades should be well designed. High quality, lightweight, and retractable sun shading elements such as blinds and screens are encouraged between columns.
26. To increase liveliness, mezzanines extending into the colonnade for no more than one-third of the colonnade width are encouraged.
27. Colonnades are to be well lit – to the appropriate Australian standard as a minimum and to provide consistent lighting levels along the colonnade.
28. Access pits and/or outlets for building services are not permitted within the colonnade zone.

Awnings

29. Provide awnings as nominated to the full extent of the street frontage of non-residential buildings in the locations nominated in *Figure 4.2 Awnings and Colonnades Plan*.
30. Awnings are not to continue across site links and building separations.

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31. Awning height is measured from the footpath to the underside of the fascia. On sloping sites the underside of the awning is to be not less than 3.2m above the footpath.
32. Steps in awnings are only permissible to accommodate sloping streets and if required over vehicle entrances. Steps in awnings are to be a maximum of 700 mm.
33. Awnings are to be 3m wide generally, except on the southern footpath of Street 32 Park Edge Street 'Haslams' and the northern footpath of Street 14 Herb Elliott Avenue, where awnings are to be 2.7m wide.
34. Awnings are to extend across the entire building elevation and be well designed. They will:
 - reflect the architecture of the building
 - complement the streetscape
 - be supported from the building.
35. Awnings must drain towards the building to eliminate gutters and downpipes on the street edge. Downpipes are to be fully concealed within, or recessed into, the ground floor frontage.
36. Awning lighting is to be recessed, have concealed wiring and conduits, and comply with requirements for pedestrian areas in the current AS/NZS 1158 Set 2010, Lighting for Roads and Public Spaces.

Public Domain Safety and Security

37. Ensure trees and vegetation do not block lighting or the field of vision of pedestrians in the public domain.
38. Improve the safety of pedestrian bridges, enclosed pathways and stairways by creating good visibility, lighting and adjacent activity at these places.
39. Ensure active frontages along all public spaces and parks.
40. Promote good surveillance of parks and public spaces by making them attractive and comfortable:
 - incorporate well placed seating with good shade and interesting views
 - design and locate public furniture, lighting, bubblers, public information, public toilets and play equipment to encourage informal use
 - provide generous, well positioned seating opportunities throughout all public open space.
41. Public open space must be clear of obstructions or structures, such as electricity substations, or car park exhaust vents, which should be incorporated into the overall building envelope .

On Street Parking

42. Ensure a minimum of two percent of street parking is reserved for mobility parking permit holders.

Through Site Links

43. Ensure Through Site Links are publicly accessible 24/7, they must not be gated.
44. Ensure Through Site Links are open to the sky and achieve the dimensions as set out in the Precinct Controls and provide direct visual and physical connects between public spaces and streets.



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Public art enlivens the urban environment and celebrates shared spaces.

Source: Philip Thalis 2007

4.4 Event Access and Closures

Events of different scale and duration occur almost daily at Sydney Olympic Park and affect access to streets and public areas. Impacts of these events depend on their size and nature and include:

- large crowds accessing, using and leaving the Town Centre
- closures of streets and public places
- noise and lights.

The Town Centre will maintain the capacity to host events of up to 250,000 event patrons, in addition to the daily resident and worker population, by:

- maintaining a major events precinct and venues north of Dawn Fraser Avenue to consolidate special access requirements and the events overlay
- maintaining an alternative eastern entrance and exit for Olympic Station at Jacaranda Square to simultaneously accommodate everyday travel and visitors to and from special events
- protecting residential precincts from event noise and traffic impacts by locating residential precincts away from event areas and using barrier buildings
- maintaining exclusive road corridors for major event bus movements during all major events
- ensuring that 10,000 public car parking spaces are available within Sydney Olympic Park during major events
- ensuring car parks have access points that lie outside the areas affected by road closures
- ensuring all residential and commercial premises can be accessed by alternate routes when roads are closed for events where required
- upgrading the Sydney Olympic Park Major Event Impact Assessment Guidelines as required.

4.4.1 Controls

To maintain access to affected development sites during events, permanent vehicle access points need to be located away from the affected streets. The typical street closures are described below and in *Figure 4.3, Event Access Plan*. From time to time other streets may also be closed. More detail about the impact and frequency of events is available from Sydney Olympic Park Authority.

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4.4.1.1 Major Stadium Events and Other Stadium Events

1. Holker Street Busway is closed to public traffic.
2. Olympic Boulevard is closed north of Dawn Fraser Avenue and will be used as a bus terminal at its northern end.
3. Birnie Avenue will only allow exiting traffic from Sydney Olympic Park post event.
4. Kevin Coombs Avenue is closed.
5. Cathy Freeman Park is used as an event extension area.
6. Edwin Flack Avenue is used for regional bus parking.
7. Dawn Fraser Avenue east has restricted access between Showground Road and Park Street.

4.4.1.2 Sydney Royal Easter Show Events

In addition to the above:

8. The entire Sydney Showground Precinct is a ticketed area and closed to general access.
9. Edwin Flack Avenue and Sarah Durack Avenue are the main loop roads during the Sydney Royal Easter Show event and will remain open. Dawn Fraser Avenue and Olympic Boulevard at Fig Grove will be closed.
10. Olympic Boulevard between Kevin Coombs Avenue and Murray Rose Avenue is used for this event.
11. Edwin Flack Avenue is used for regional bus parking.

4.4.1.3 Athletics Centre and Warm Up Arena Events

12. Access into the Central Sports Precinct via Shane Gould Avenue may be affected by prioritised pedestrian crossing to facilitate event access between the Warm Up Arena, Sydney Olympic Park Athletic Centre and Pedestrian Stadium Tunnel.
13. Part or all of the public areas around the Athletic Centre and Warm Up Arena may be ticketed and closed to general access.

4.4.1.4 Minor Events

14. Olympic Boulevard between Dawn Fraser Avenue and Grand Parade is closed for these events.

4.4.1.5 Tennis Events

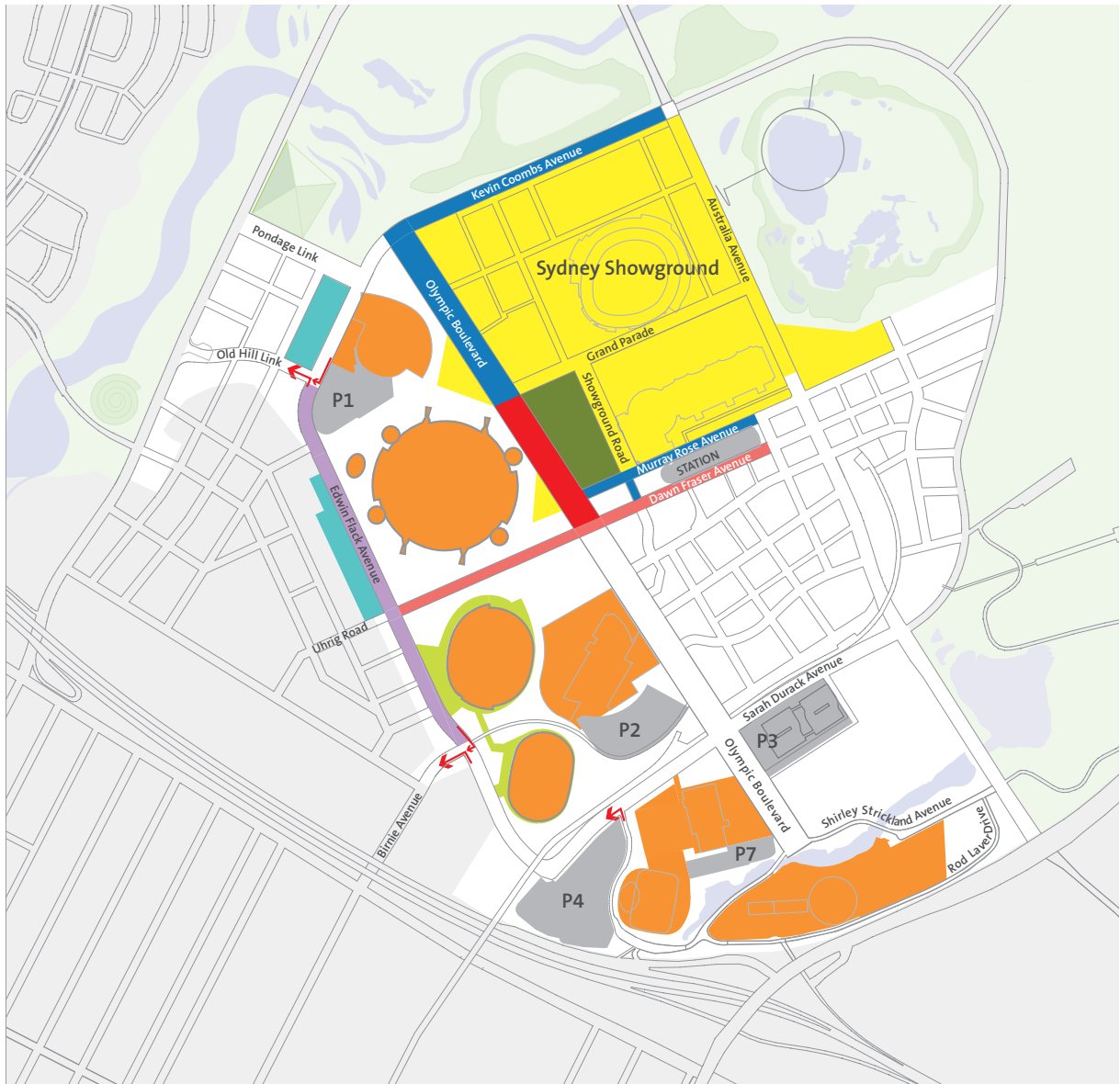
15. Shirley Strickland Avenue and Rod Laver Avenue are closed to general access during tennis events.

4.4.1.6 Development and Project Application Requirements












16. Developers must provide an Event Impact Statement that includes the information set out in Appendix A, List of Information Required for Development and Project Applications. Sydney Olympic Park Authority will assess the event impact of each development proposal in accordance with the Major Event Impact Assessment Guidelines for Sydney Olympic Park.

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Figure 4.3 Event Access Plan



Key

















- | | | | | | |
|---|---|---|---|---|---------------|
|  | Forced Exit Following Major Events |  | Major Stadium Event Closures |  | Coach Parking |
|  | Event Venue |  | Major Stadium/Other Stadium/Sydney Royal Easter Show/Minor Event Extension Area | | |
|  | Sydney Royal Easter Show |  | Event Car Parking/Station | | |
|  | Major Stadium/Other Stadium/Sydney Royal Easter Show Event Closure |  | Periodic Closure for Athletic Centre/Warm Up Arena Events | | |
|  | Major Stadium/Other Stadium/ Sydney Royal Easter Show/Minor Event Closure |  | Closures for Egress of Major Stadium Events | | |

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Figure 4.4 Land Uses Plan



Key

- | | | |
|--|--|--|
|  Public Domain |  Educational |  Car Parking, Coach Parking and Rail Corridor |
|  Residential |  Entertainment |  Land Dedicated for ICF Funded Streets |
|  Commercial |  Hotels and Serviced Apartments |  Land Dedicated for Development Funded Streets |
|  Mixed Commercial and Residential (variation to land use split line refer to Section 5.2.4) |  Venue Expansion Zone |  Subject to Future Master Plan Study |
|  Community Uses |  Venue and Operational Uses |  Mixed Commercial, Hotels and Serviced Apartments |
|  Mixed Commercial and Entertainment | | |

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4.5 Land Uses and Density

4.5.1 Land Use Controls

1. Permitted land uses are to comply with *Figure 4.1 Active Frontages Plan* and *Figure, 4.4 Land Uses Plan* and *Table 4.2 Allowable Land Uses* for the relevant precinct.
2. Ground level active uses are to have a minimum depth of 3m.
3. The following developments and uses are allowed for each land use category. Additional development and uses may be permitted within the category as specified in the Precinct Controls, set out in Section 5.

Table 4.2 Allowable Land Uses

Land Use Category	Allowed Developments and Uses
Venues and Operational Uses	Office Space Depots Event Related Temporary Structures Place Management Centres Recreation Areas Recreation Facilities (major outdoor and indoor) Activities associated with the Sydney Royal Easter Show (in the Sydney Showground Precinct) Child Care Centres
Venue Expansion Zones	Uses where the intended activities support the prime purpose and activities of the venue
Commercial	Amusement Centres Business Premises Health Services Facilities Entertainment Facilities Function Centres Office Premises Registered Clubs Retail Uses as noted in the Retail Plan Places of Worship Education (up to 30% of GFA)
Residential	Multi- Dwelling Housing Residential Accommodation Seniors Housing Ancillary Home Business Uses (maximum 20% of total dwelling) Retail Uses (maximum 10% of total GFA) Child Care Centres All Residential Uses not covered under Hotels and Serviced Apartments
Hotels and Serviced Apartments	Backpacker Accommodation

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Table 4.2 Allowable Land Uses continued

Land Use Category	Allowed Developments and Uses
Hotels and Serviced Apartments	<ul style="list-style-type: none"> Bed and Breakfast Accommodation Hotel Accommodation Serviced Apartments Student Accommodation Hostels
Retail Uses	<ul style="list-style-type: none"> Food and Drink Premises Foyers Child Care Centres Professional Suites Bars Retail Premises Service Premises such as Banks, Post Offices, Laundries Takeaway Food and Drink Premises Supermarkets Restaurants Medical Centres
Themed Retail Uses	<ul style="list-style-type: none"> Destination based retail associated with sports, entertainment, cinemas, nightclubs, and business themed retail associated with education, sport, wealth, leisure, wellbeing, culture, the arts, food and entertainment Takeaway Food and Drink Premises
Special Event Retail Uses	<ul style="list-style-type: none"> Food and Drink Premises including temporary premises Pubs Bars Takeaway Food and Drink Premises Retail associated with Major Sporting Venues
Streets	<ul style="list-style-type: none"> Event related temporary structures including traffic management structures and temporary terminal structures Public Art Basement Car Parking
Community	<ul style="list-style-type: none"> Child Care Centres Community Facilities Educational Establishments Information & Education Facility Place Management Centres Places of Public Worship Public Halls Retail Uses as noted in the Retail Plan Office Space Ancillary Business Use (maximum 10% of total GFA)

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Table 4.2 Allowable Land Uses continued

Land Use Category	Allowed Developments and Uses
Education	Educational Establishments Libraries Performance Spaces Conference Facilities Sport Administration Research Facilities Training Facilities Indoor/Outdoor Sports Facilities Lecture Theatres Ancillary Business Uses (maximum extent and duration of ancillary business use is subject to negotiation) Themed Retail Uses as noted in the Retail Plan Retail Uses (maximum 10% of total GFA) Child Care Centres Student Accommodation (up to 30% of GFA)
Entertainment	Amusement Centres Business Premises Entertainment Facilities Food and Drink Premises including Takeaway Function Centres Pubs Registered Clubs Retail Uses
Public Domain	Event Related Temporary Structures Recreation Area Public Conveniences Small Kiosk Structures not exceeding 25m Recreation Facilities (Indoor) Plazas Public Art Community facilities
Public Car Parking, Coach Parking and Rail Corridor	At Grade and Structured Public Parking Coach Parking Railway Associated Uses Transport Related Uses

4.5.2 Floor Space Ratio Controls

To ensure amenity, good urban form, adequate transport and traffic capacities are not exceeded for Sydney Olympic Park:

1. The maximum floor space ratio achievable for each development site is nominated in the Site Floor Space Ratios Plan for the relevant precinct in Section 5.

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2. The maximum floor space ratio achievable is to be calculated on the basis of the Floor Space Ratio boundaries as specified in the Precinct Controls set out in Section 5.
3. Where identified, land will be required to be dedicated to Sydney Olympic Park Authority for use as a public street, public open space or public domain.
4. The maximum floor space ratio will be granted only when the following controls are complied with: Building Zone, Building Depth, Building Heights, Building Separation, Building Setback, Open Space and Deep Soil Zone.
5. Where floor space ratio controls are not specified, the maximum Gross Floor Area is as shown on drawings for the relevant precinct in Section 5.
6. Bonus floor space not exceeding 1.25:1 may be permitted for residual sites if amalgamated with adjacent lots. This applies to existing leased sites fragmented by new street alignments into new sites that satisfy the following criteria:
 - commercial sites with site boundaries less than 30m or a site area of less than 3,000m².
 - residential sites with one site boundary less than 20m and a site area of less than 1,000m².



Source: Xing Ruan 2004

Atriums and light wells in commercial buildings increase daylight and ambience.

4.5.3 Commercial Use Controls

Before consent is given for commercial development, the consent authority will determine whether there is adequate capacity within the transport and road networks servicing Sydney Olympic Park (refer to Section 4.8.1, Transport Strategies and Infrastructure Controls).

4.6 Building Form and Amenity

To generate high quality, ecologically sustainable and climatically appropriate buildings that maximise utility and amenity, and define and reinforce a lively public domain the following controls apply.

4.6.1 Development Site Controls

To create streets and blocks that enable efficient land development and improve access, address and amenity:

1. Create the sites shown in the Site Boundaries Plan for the relevant precinct.

4.6.2 Building Zone Controls

The building zones identified are larger than suitable footprints to allow design flexibility. It is not intended that the entire zones are built over. Other building and land use controls, including floor

4.0 General Controls and Guidelines

Source: Sydney Olympic Park Authority 2007



Topographical articulation maximises opportunities for view sharing, improves amenities and controls the impact of development.

space ratio, building depth, open space and deep soil requirements, setbacks and balconies, will affect the design of final building footprints.

To encourage well-oriented, appropriately scaled, street defining buildings that will provide transparency and maximise access to sun, daylight and prevailing breezes:

1. Locate buildings within the building zone indicated on the relevant precinct Building Zone and Setback Plan in Section 5.
2. Provide through site links and view corridors where indicated on the relevant precinct control plan in Section 5.
3. Ensure building layouts optimise solar access, natural light, cross-ventilation, usable communal outdoor areas and views.

4.6.3 Building Depth Controls

To encourage naturally lit and well ventilated buildings with generous courtyards and setback and avoid bulky buildings that block views and impede ESD requirements:

1. Ensure the maximum building depth is 18m (glass line to glass line) for all residential building floorplates.
2. The preferred maximum commercial building depth without atria and light wells is 25m.
3. Ensure all workstations on an office floor (excluding the core and other ancillary spaces) are 12m or less from an external window or an atrium (as described in part 4.6.6) for buildings up to 8 storeys high.
4. Underground car parking is to be concentrated under the building footprint and fully under natural ground level.

4.6.4 Building Height Controls

Building heights are expressed in storeys or as 'Relative Level' (RL) where existing building heights are to be matched.

To reinforce the primacy of Olympic Boulevard and to create consistent building heights along main streets, maintain solar access to the public domain and maintain the iconic Olympic skyline:

1. Comply with the heights nominated in the Building Heights Plan for the relevant precinct.
2. Minor increases to the heights nominated in the Building Heights Plans may be considered if:
 - special site conditions make strict compliance with the controls unworkable
 - there are demonstrable improvements to urban form and height transition
 - resident amenity in terms of privacy and solar access is not adversely affected
 - there is no impact on public open space and parklands.

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- For sites adjoining sloping streets, the maximum number of storeys is to be calculated from the highest finished footpath level, and recalculated a minimum of every 1.5m vertical change in slope.
- For sites adjoining two or more streets, the maximum number of storeys is not to exceed a plane created by joining the number of storeys measured along each street frontage.
- For south and west facing buildings over eight storeys high, setbacks and other treatments may be required to minimise wind turbulence. All developments over 25m high will require assessment by a wind consultant.
- Comply with the minimum floor to ceiling heights listed in *Table 4.3, Minimum Ceiling Heights* below:

Table 4.3 Minimum Ceiling Heights

	All Habitable Rooms	All Non-Habitable Rooms	Ground Floors	Above Ground Floors
Community Uses Public Buildings Commercial Buildings Retail Uses Educational Uses	NA	NA	4.0m except for storage and service areas	2.7m
Mixed Use Buildings	2.7m	2.4m	3.3m except for storage and service areas	2.7m
Temporary Accommodation Kiosks, Small Pavilions	NA	NA	3.0m	2.7m
Residential Uses	2.7m	2.4m	3.3m	2.7m

4.6.5 Rooftop Services Zone Controls

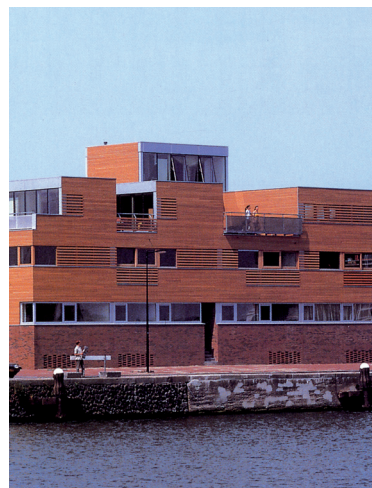
To minimise the visual impact of roof top plant:

- The maximum rooftop service zone height is 5m.
- Set back the rooftop service zone 3m from the parapet.
- The total area in plan above the maximum building height for services may not exceed 80 per cent of the building footprint area.
- Design lift towers, machinery plant rooms, chimneys, stacks, vent pipes and television antennae to minimise their visibility and size.
- The design of rooftop structures is to be integral with the overall building design.

4.6.6 Building Separation Controls

To ensure visual and acoustic privacy and amenity are maintained between buildings:

- Ensure that courtyards and atria in commercial buildings have a minimum width of 9m.



Source: Christian Schittich 2004

In streets where building heights are nominated as maximums (refer to Building Height Controls in Section 5.0 Precinct Controls and Guidelines), variation of roof profile and height are encouraged to sculpt the roof profile, create outdoor spaces and different apartment outlooks.



Source: J Zhou and Colquhoun 2001

Coordinated building separation provides connection and views.

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Source: Helen Norrie 2004



Detailed design of the balustrades, sun shades and privacy screens contributes to the overall facade composition of the building, adding depth and variety to the street edge.

2. A minimum separation of 24m is required between commercial buildings and facing habitable rooms in residential buildings opposite.

Residential Buildings

3. For facing residential buildings up to eight storeys with no openings, zero building setback is required.
4. For facing residential buildings up to eight storeys with openings in one wall, a minimum 6m setback is required.
5. For facing residential buildings with openings in both walls separation distances, refer to *Table 4.4 Minimum Building Separation*.

Table 4.4 Minimum Building Separation

Building Height	Room Types	Minimum Separation Required
Up to 4 storeys	Between facing non-habitable rooms	6 m
	Between facing habitable rooms/ balcony and non-habitable rooms	9 m
	Between facing habitable rooms/ balconies	12 m
5 to 8 storeys	Between facing non-habitable rooms	6 m
	Between facing habitable rooms/ balcony and non-habitable rooms	9 m
	Between facing habitable rooms/ balconies	12 m
8 to 10 storeys	Between facing habitable rooms/ balconies	18 m

4.6.7 Building Setbacks

To reinforce street hierarchy and layout, permit solar access to the public domain, promote privacy, provide a transition between the public and private area, and allow for coordinated landscaped settings for buildings:

1. Comply with the building setbacks indicated on the Building Zone and Setbacks Plan for the relevant precinct.
2. Ensure building facades reinforce the street alignment.
3. Above ground articulation in the form of balconies, sunscreens and bay windows and the like may extend 300mm into the front setback zone.

4.6.8 Tower Building Controls

Sydney Olympic Park is recognisable by its distinctive skyline of iconic sports venues as well as its open space setting. Towers are defined as building over 8 storeys. Controls for the location and envelopes of tall buildings complement these elements by:

4.0 General Controls and Guidelines

- identifying and preserving all remaining vistas of the key icon elements
- providing a hierarchy of building height that reinforces Olympic Boulevard and Australia Avenue as the primary north-south streets through Sydney Olympic Park
- positioning taller towers within a primary tower zone along Olympic Boulevard and Australia Avenue to reinforce the major north-south alignments of between 30-45 storeys
- providing a transitional secondary tower zone adjacent to the primary tower zone of between 15-20 storeys
- limiting the overall dimensions and spacing of towers to achieve slender, articulated and well spaced tower forms
- providing podiums of 5 – 8 storeys with a setback above 6 storeys in commercial streets and 4-8 storey podiums in residential streets except along the Boulevard which requires an 8 storey podium
- minimising overshadowing of significant public open spaces in the Town Centre
- providing for upper level setbacks to reduce wind turbulence at ground level.

Podium Design and Setbacks

1. Provide a setback of 2m for levels 7 and 8 except for the Olympic Boulevard frontage.
2. A podium height of 28m along Olympic Boulevard frontages is mandatory.

Tower Footprint and Setbacks

3. Tower building footprint to a maximum of 900m² (Gross Building Area) are encouraged.
4. Towers are to be setback above level 6 by a minimum of 2 metres, and a minimum of 5 metres, maximum of 10 metres along the Boulevard.

Separation Distances

5. Tower buildings are to be spaced to ensure that all north facing frontages affected by the proposed tower building have full solar access for a minimum of 2 hours between 9am and 3pm on 30 June.
6. Notwithstanding the above, maintain a minimum 40m separation between tower buildings on neighbouring sites.
7. The positioning and separation of tower buildings should not impact on existing vistas along streets, views to external parklands or any other significant landmarks.

Maximum Horizontal Dimensions

Ensure the tower building envelopes do not exceed the following maximum plan dimensions:

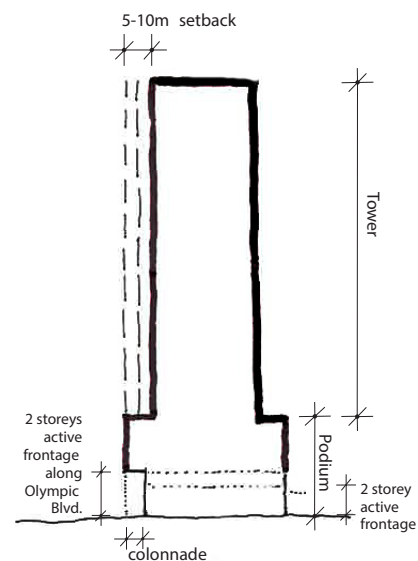
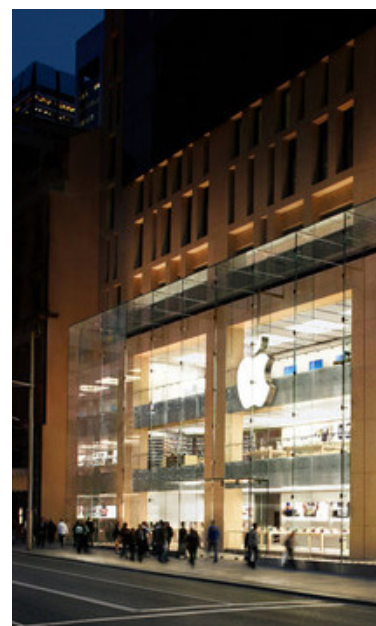


Figure 4.5
Tower Building Controls



Double and triple height active frontages provide a high level of visual interaction and interest between the street and the inside of the building.

4.0 General Controls and Guidelines

8. For commercial buildings, floor plates over 1200m² GFA and 60m in length should be articulated into separate wings with connecting lift/lobby zones.
9. For residential buildings, floor plates over 600m² GBA and 25m in length should be articulated into separate wings around each lift/lobby zone. Floor plates for levels above 15 storeys should not exceed 900m² GBA.

Maximum Distances to Natural Light Sources

To encourage naturally lit and well ventilated tower buildings and avoid bulky buildings that block views and impede ESD requirements:

10. Ensure the maximum building depth is 18m (glass line to glass line) for all residential towers.
11. The preferred maximum commercial building depth without atria and light wells is 25m.
12. Ensure all workstations on a tower office floor (excluding the core and other ancillary spaces) are 12m or less from an external window or an atrium.

Building articulation

To minimise tower bulk and impact on the public domain:

13. Floor plates should exceed the area and dimensions outlined above.
14. Where towers are articulated into separate wings, the heights of each wing should be varied to reduce overall bulk of the tower.
15. Articulate tower and podium separations, through the use of setbacks, recessing etc, for streets off Olympic Boulevard to modulate street corners and avoid sheer tower frontages adjacent to the public domain. Consider setting back or recessing upper levels.
16. Provide for a continuous 2 storey high (8m) and 4m wide colonnade along all Olympic Boulevard frontages. In addition to the colonnade controls outlined in part 4.3.1; colonnades along Olympic Boulevard are to incorporate evenly spaced columns at a maximum of 8m centres.

4.6.9 Accessibility Controls

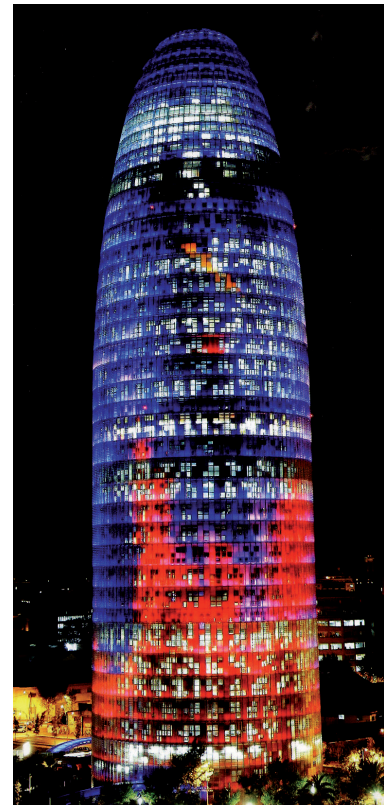
1. With each application, prepare and submit a Disability Access Strategy to the satisfaction of Sydney Olympic Park Authority and the consent authority that will satisfy:
 - AS 4299 – 1995: Adaptable Housing (for residential developments)
 - Sydney Olympic Park Authority Disability Access Guidelines (2015).
2. Ensure that 30 per cent of ground floor apartments in each residential development are visitable as defined in AS 4299.

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3. For apartments where there is potential for future conversion to commercial use or wheelchair access is required, ground floors are to be contiguous with the external footpath levels.
4. Ensure equitable access is provided to the main building entrance from both the street and car parking areas.
5. Ensure car parking provisions comply with:
 - AS 1428.1 – 2009: Design for Access and Mobility – General requirements for access-New Building Work
 - AS 1428.2 – 1992: Design for Access and Mobility – Enhanced and Requirements – Buildings and Facilities
 - AS 2890.1 – 2004: Parking Facilities – Off Street Car Parking
 - AS 2890.5 – 1993: Parking Facilities – On Street Parking
 - AS 2890.6 – 2009: Parking Facilities – Off-street Parking for People with disabilities.
6. Locate accessible car parking spaces at the most convenient place for users, taking into account proximity to pedestrian entries and exits, lifts and ramps, accessible toilets and pay stations. Delivery of accessible parking spaces to be provided consistent with SOPA's Access Guidelines.

4.6.10 Design Excellence Controls

To ensure the highest quality design for key sites in Sydney Olympic Park, a design competition is required for sites identified in Figure 4.6 Design Competition Sites Plan. The requirements for the design competition process are contained in the Sydney Olympic Park Authority Design Excellence Policy.



Source: Fernandez-Galiano 2005

Design excellence is especially important for very prominent sites and towers.

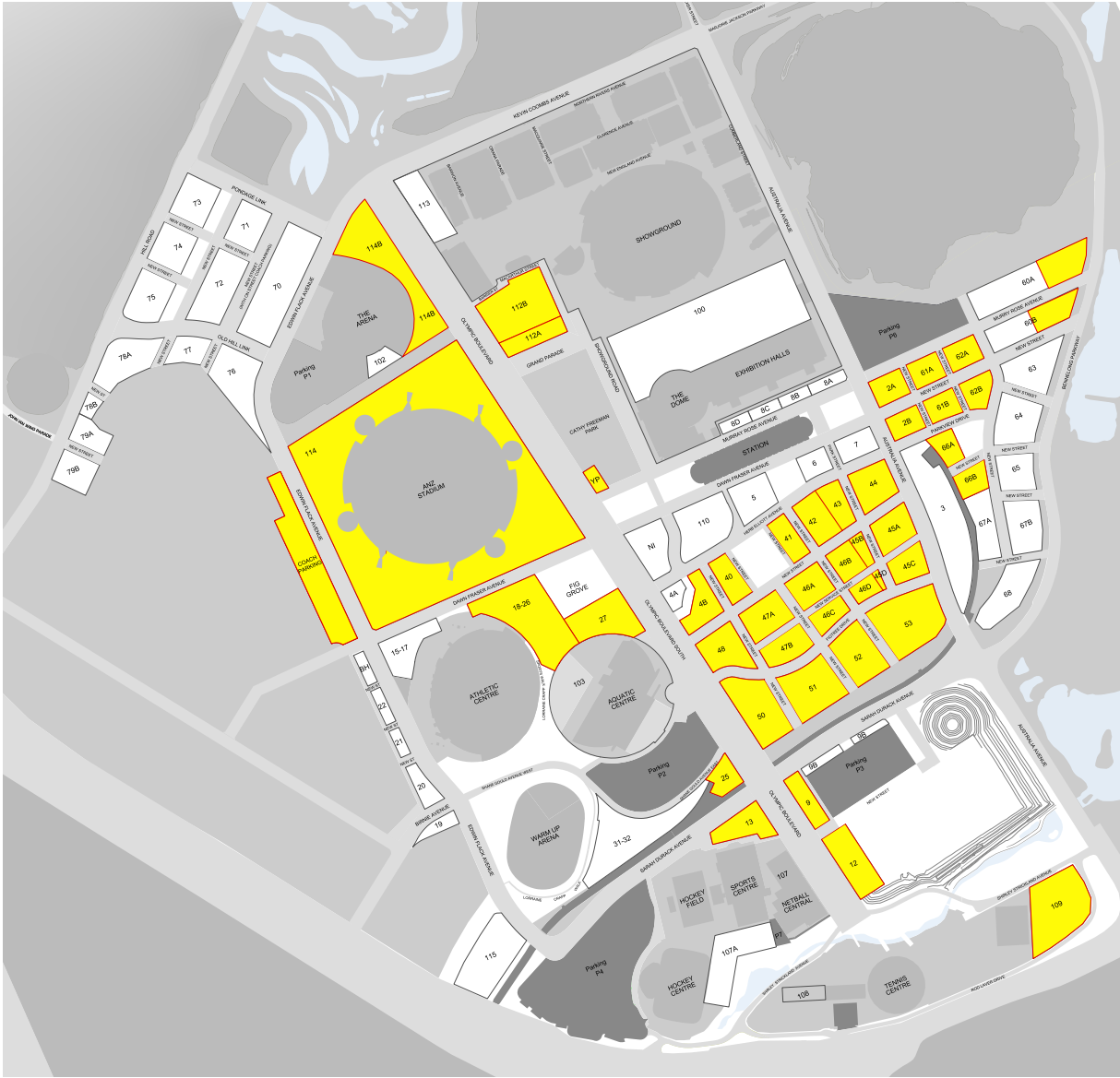


Source: Robert Morris-Nunn 2007

Design excellence promotes integrated solutions that combine functionality with aesthetics and sustainability.

4.0 General Controls and Guidelines

Figure 4.6 Design Competition Sites Plan



Key

- Design Competition Sites
- Subject to Future Master Plan Study

4.0 General Controls and Guidelines

4.6.11 Building Expression Controls

To promote high quality architecture and urban streetscapes:

1. Ensure building facades are well modulated and scaled to reflect the aspect, uses and streetscape.
2. Design building facades to create a well defined and integrated streetscape.
3. Ensure prominent elements are well articulated, including the ground floor, roofs, windows, doors, balconies and shading devices.
4. Provide modulation such as thickened walls, blade walls, fenestration, and sun shading elements to building frontages.
5. Provide appropriate forms of sun shading to screen eastern, northern and western sun, such as external adjustable vertical shading, sliding screens and brise-soleil.
6. Ensure that main building entrances are level with adjacent footpaths.
7. Provide individual off-street entry to at least 75 per cent of ground floor apartments in mixed use zones and 50 per cent of ground floor apartments in residential zones.
8. Adopt a broader palette of colour and textured material in building designs generally and avoid the over-use of reflective, monochromatic finishes such as glazed and metallic claddings.
9. Ensure architectural variety across long block edge facades by varying the articulation and/or modulation and/or materials for around every 30-40m length of building façade.



Source: Christian Schittich 2004

Individual entrances from the street to apartments break down the scale of apartment blocks, increase the liveliness and security of streets and provide good residential identity.



Source: Robert Morris-Nunn, 2007

Balconies are encouraged on commercial buildings to improve the working environment.

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Source: Sydney Olympic Park Authority 2007



Private balconies and appropriate building setbacks promote casual surveillance and opportunities for outdoor living.

4.6.12 Safety and Security Controls

To promote natural surveillance, discourage crime and contribute to the overall safety and vitality of public and communal spaces:

1. Provide active frontages and active uses along all park and public space frontages, including spaces that are privately and publicly owned or managed.
2. Ensure buildings are designed to contribute to the natural surveillance of adjacent streets and public space.
3. Promote casual views from residences to common internal areas such as lobbies, foyers, hallways, recreation areas and car parks.
4. Provide direct and well lit access between car parks and dwellings in car parks and lift lobbies, and to all apartment entrances.
5. Ensure ramps have direct access to building entrances from the street and are visible from the street.
6. Ensure that residential building entry points are within clear site of a public street frontage.
7. For residential building sites, provide clearly defined and defensible separation between public and private areas.
8. For residential buildings, locate the most active rooms, living rooms and kitchens to overlook the public domain and communal outdoor spaces.
9. For commercial and mixed use buildings, ensure retail or active uses on the ground floor open directly onto the street and have a clear visual connection with the street. Street level windows are to be clear glazed.
10. Development should ensure that Sydney Olympic Park's Closed Circuit Television coverage is not obstructed or compromised in any way.
11. Utility structures such as electrical substations and car park exhaust vents are not permitted in the public domain.

4.6.13 Light Well Controls

To promote adequate natural ventilation and solar access, the following controls also apply to deeply recessed façades:

1. Ensure light wells are fully open to the sky.
2. Ensure light wells dimensions comply with minimum building separation controls.
3. Ensure light wells in residential buildings are not the primary source of daylight for any habitable room.

4.6.14 Cross-Ventilation Controls

1. Design the site, building layout and individual apartments to promote, capture and guide natural breezes.

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2. Select and locate doors and operable windows to maximise natural ventilation opportunities established by the apartment layout.
3. Minimise mechanically ventilated bathrooms and laundries.
4. Commercial office developments should have capacity for openable windows.

4.6.15 Noise Controls

Sydney Olympic Park Authority will continue to use 'Public Positive Covenants' to ensure landowners and lessees acknowledge the environmental and operational conditions that arise from the sporting, events and entertainment business – a prominent feature of life at Sydney Olympic Park that may affect their use and enjoyment of their properties.

To acknowledge and minimise the current potential noise impacts of sporting and entertainment venues and control transport and industrial noise to conform with NSW guidelines:

1. New development is to acknowledge that it will be located within a major sport and entertainment events precinct that may be subject to high noise events from time to time. This will be achieved by creating a 'Section 88D' instrument (on Sydney Olympic Park land) or a 'Section 88E' instrument (on non – Sydney Olympic Park land) on title advising of likely noise levels in the precinct.
2. Applicants for a new development must prepare a report by a suitably qualified acoustic consultant assessing the possibility of land use conflicts as a result of the development. The land use conflict could be, for example, from an entertainment venue on the closest residential receiver or it could be the result of a new residential development possibly restricting the use of an existing entertainment venue. The suitability of the development for the site is the responsibility of the applicant who is required to assess the noise impact and to incorporate appropriate measures into the development.
3. All noise impact assessments require ambient noise levels measured at the noise sensitive premises during representative periods to ensure all major intermittent noises are measured and quantified. This particularly applies to outdoor concerts, sporting events and late night parties. The results of the noise measurements should be used to design noise mitigation measures relevant to the proposed development.
4. All plant rooms shall be designed to meet the requirements of the NSW Industrial Noise Policy.

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Late Night Events

- Late night events including dance parties are defined as those taking place between 11 pm and 6 am. Late night events beyond those already having planning approval are not permitted unless they take place in a venue or building that is designed to manage the noise impacts upon adjoining uses.

Commercial Development

- Design commercial development to comply with the maximum internal noise criteria set out in *Table 4.5 Maximum Noise Criteria – Office Development*.

Table 4.5 Maximum Noise Criteria – Office Development

Internal Space	Noise Criterion	Time Period	Noise Measure
Offices	45dBA	Day & Evening	LAeq, 15 min

Educational Development

- Design educational facilities to comply with the internal noise criteria and the recommended maximum levels in AS/NZS2017:2000 for other educational spaces set out in *Table 4.6 Maximum Noise Criteria – Educational Development* below:

Table 4.6 Maximum Noise Criteria – Educational Development

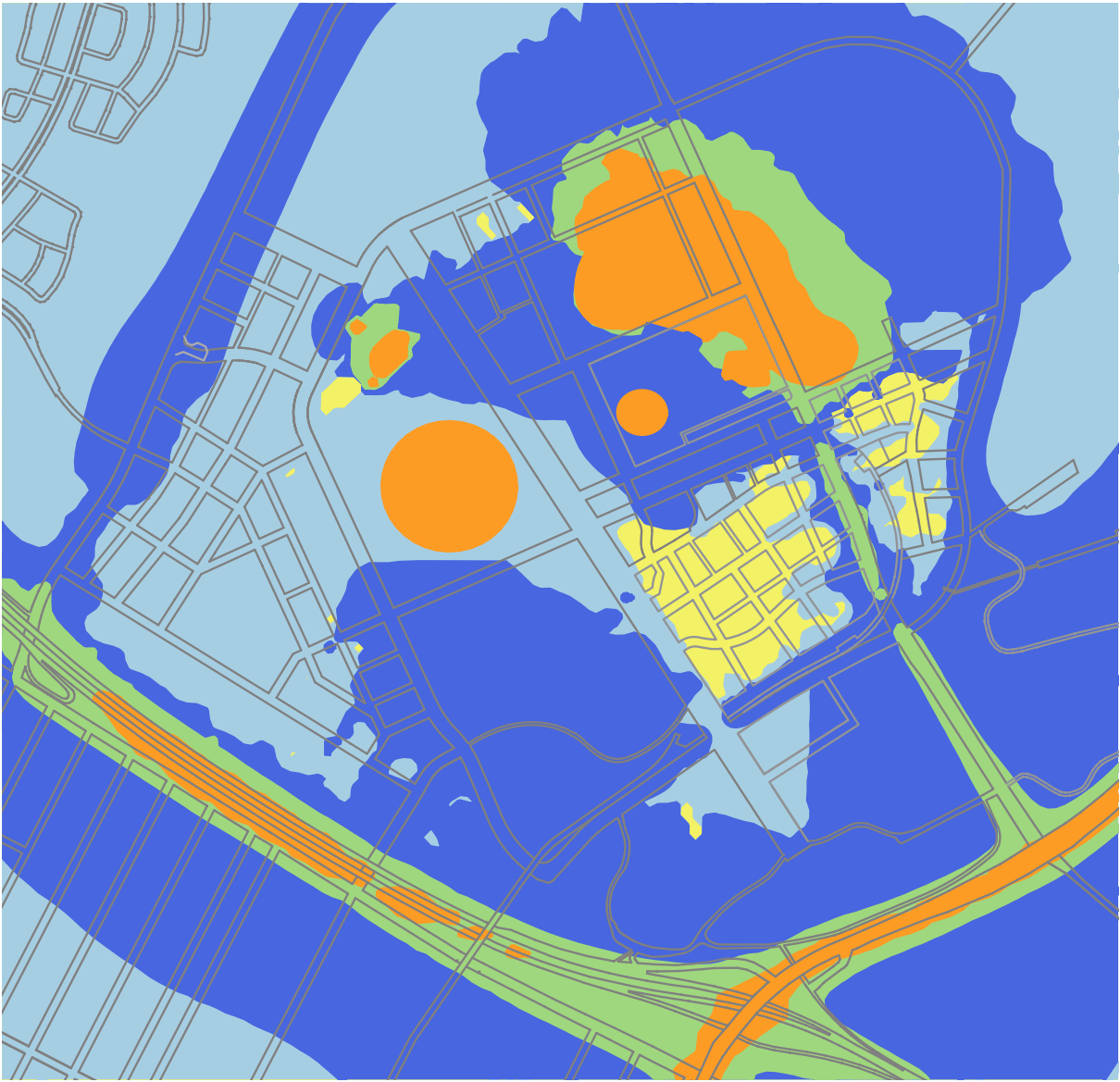
Internal Space	Noise Criterion	Time Period	Noise Measure
Lecture Theatres	35dBA	Day & Evening	LAeq, 15 min
Libraries	45dBA		
Computer Rooms	45dBA		
Conference Rooms	40dBA		
Laboratories	45dBA		

Residential Development






- Residential development is not permitted in the orange areas shown in *Figures 4.7 and 4.8 Noise Plans*. In the Substantial Noise Mitigation and Some Noise Mitigation Zones in *Figures 4.7 and 4.8*, residential uses will only be permitted where they can comply with the maximum internal noise criteria shown *Table 4.7 Maximum Noise Criteria – Residential Development*.

4.0 General Controls and Guidelines

Figure 4.7 Noise Plan – Long Term – Buildings under 25m High

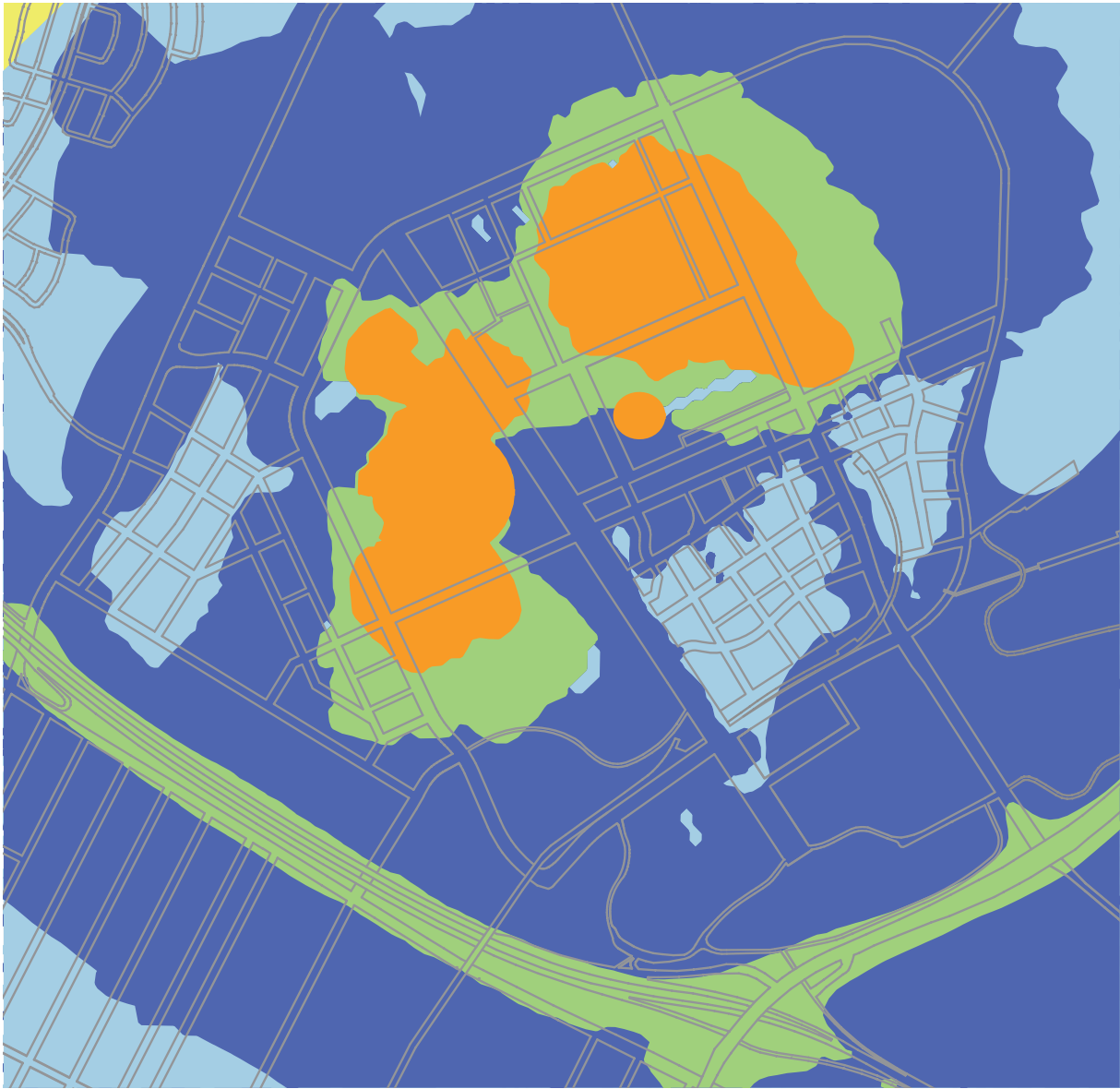


Key






-  Residential Uses Not Permitted
-  Maximum Noise Mitigation Required
-  Substantial Noise Mitigation Required
-  Some Noise Mitigation Required
-  No Noise Mitigation Required

4.0 General Controls and Guidelines

Figure 4.8 Noise Plan – Long Term – Buildings over 25m High



Key

-  Residential Uses Not Permitted
-  Maximum Noise Mitigation Required
-  Substantial Noise Mitigation Required
-  Some Noise Mitigation Required
-  No Noise Mitigation Required

4.0 General Controls and Guidelines

Table 4.7 Maximum Noise Criteria – Residential Development

Internal Space	Noise Criterion	Time Period	Noise Measure
Living Rooms	45dBA	Day & Evening (7am to 10pm)	LAeq, 15 min
Working Areas			
Sleeping Rooms	40dBA	Night Time 1 (10pm to 7am)	

9. Arrange apartments within a development to minimise noise transition between apartments by consolidating noisy active areas away from quieter areas.
10. Use storage or circulation zones to buffer noise from adjacent apartments, mechanical services or corridors and lobby areas.
11. Resolve conflicts between noise, outlook and views with appropriate barriers, including double glazing, openable screens, screened balconies and terraces.
12. Wherever practicable, residential developments shall be sited, orientated and treated to mitigate noise and maximise natural ventilation while avoiding the use of air conditioning.
13. Where residential development is located in the area marked 'Substantial Noise Mitigation Required', air conditioning and double glazed windows and doors are required to reduce noise impact at certain times by closing all doors and windows.
14. Where residential development is located in the areas marked 'Some Noise Mitigation Required', air conditioning or mechanical ventilation will be required to allow doors and windows to be closed some of the time.

Hotel and Serviced Apartment Developments

15. Wherever practicable, hotels and serviced apartment developments shall be sited, oriented and treated to maximise natural ventilation and avoid the use of air conditioning.
16. Hotel and serviced apartment developments is not permitted in the orange areas shown in *Figures 4.7 and 4.8 Noise Plans*.
17. Where residential development is located in the area marked 'Substantial Noise Mitigation Required', air conditioning and double glazed windows and doors are required to reduce noise impact at certain times by closing all doors and windows.
18. Design hotels and serviced apartment developments to comply with the residential internal noise criteria set out in *Table 4.8 Maximum Noise Criteria – Hotels and Serviced Apartments* below:

Table 4.8 Maximum Noise Criteria – Hotels and Serviced Apartments

Internal Space	Noise Criterion	Time Period	Noise Measure
Living Rooms	45dBA	Day & Evening (7am to 10pm)	LAeq, 15 min
Working Areas			
Sleeping Rooms	40dBA	Night Time (10pm to 7am)	

4.0 General Controls and Guidelines

4.6.16 Waste Management Controls

To achieve a development that minimises the generation of waste during its design, construction and operational phases:

For Development Application

1. Submit a Waste Management Plan with all Development Applications to the satisfaction of Sydney Olympic Park Authority.
2. Waste Management Plans are to demonstrate application of the principles of the waste management hierarchy of waste avoidance, reduction, re-use and recycling, and are to refer to the Environmental Guidelines for Sydney Olympic Park 2008.

Design and Construction

3. Minimise waste during the design of a building by coordinating building dimensions to the standard size of building materials and utilising components that can easily be replaced.
4. Prioritise the procurement of:
 - modular and prefabricated building and fitout components
 - sustainable building materials (based on material life cycle assessment)
 - incorporate re-used or recycled materials such as steel and concrete.
5. A minimum of 80 per cent of construction and demolition waste must be recycled or re-used. This includes, but is not limited to, pavements, soils, asphalt, concrete, masonry, wood, formwork, plasterboard, metals, glass, carpet or floor coverings, paper, cardboard, vegetation, plastic and building fittings.
6. Include space for on site waste management infrastructure that maximises the opportunities for the sorting and segregation of waste materials.
7. Locate waste management areas, including collection points, out of public areas so as to not cause offence to the general public, adjoining properties or occupants with regard to smell, visual amenity and noise.
8. Locate waste management areas wholly within the building.
9. Design waste management areas to allow collection vehicles to enter and exit the development in a forward direction.

Retail Developments

10. Ensure that all retail developments designate on site communal waste management areas for the sorting, storage and recycling of back of house waste.
11. Include provision for the collection and recycling of back of house food collection.

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Retail and Commercial Operations

12. Minimise operational waste by:
 - avoiding the use of packaging materials in the first instance or using materials that are easily recycled
 - separating and recovering paper and food waste.

Residential Developments

13. Design waste management infrastructure to be consistent with the Department of Environment, Climate Change and Water's 'Better Practice Guide for Waste Management in Multi-Unit Dwellings'.
14. Locate garbage and recycling areas away from openable windows to habitable rooms and away from street frontages.
15. Sink food waste disposal units are not permitted due to the high organic load they place on the water recycling system.

4.6.17 Residential Building Controls

To ensure a high quality living environment with good design, amenity and environmental sustainability for residents of Sydney Olympic Park:

SEPP 65 Residential Flat Design Code

1. The *SEPP 65 Apartment Design Guide* are to be applied to all residential and mixed use developments.

Affordable Housing

2. All development proposals must include an economic assessment detailing the quantity of affordable housing achievable within the development. This must provide for a minimum of five per cent affordable housing, or the minimum required amount in accordance with any State or Local policy in force at the time of development, whichever is greater.
3. Affordable housing is to be distributed throughout the township and developments.
4. Affordable housing must be constructed to a standard consistent with other dwellings within that development.
5. The final form and location of the affordable housing contribution will be determined through the detailed design and approval process.

Minimum Apartment Sizes

To promote housing amenity and a range of apartment types with good amenity:



Source: J Zhou and Colquhoun 2001

Three bedroom apartments at ground level with direct access to private and communal open spaces provide excellent amenity for families.



Source: Christian Schittich 2004

Balconies with roofs and retractable screens can become outdoor rooms and extend available living space.

4.0 General Controls and Guidelines



Source: J Zhou and Colquhoun 2001

Courtyards designed with a sense of wilderness provide a beautiful outlook that reflect the locality.



Source: J Zhou and Colquhoun 2001

Tall trees in courtyards provide privacy, habitat for birds and ambience.

6. Comply with the minimum apartment sizes in *Table 4.9 Minimum Residential Apartment Sizes* below:

Table 4.9 Minimum Residential Apartment Sizes

	Minimum Size with External Balcony	Minimum Size with Balcony Included within the Apartment
Studio	40 m ²	50 m ²
1 Bedroom Apartment	50 m ²	59 m ²
2 Bedroom Apartment	70 m ²	82 m ²
3 Bedroom Apartment	95 m ²	110 m ²

Apartment Mix

To create a vibrant, diverse and self sustaining community with housing suitable for many life stages:

7. Provide the following quantities of apartment types to all residential and mixed use developments:
 - a minimum of 15 per cent studio or one bedroom apartments
 - a minimum of 15 per cent of three or more bedroom apartments
 - for developments less than nine storeys high, maximise the number of three bedroom apartments at ground floor level with direct access to open space suitable for family use.

Balconies

To provide opportunities for outdoor living and outdoor clothes drying in apartments:

8. Provide each above ground floor apartment with a primary balcony, terrace or deck that is directly accessible from the main living room or kitchen and complies with the minimum open space sizes for apartments in *Table 4.13 Minimum Open Space Provision – Residential Uses*.
9. Provide a northern, eastern or western aspect to primary balconies.
10. A minimum dimension of 2.4m is required to primary balconies.
11. Secondary balconies are encouraged as service areas, to alleviate uses dependent on the primary balcony and to increase connection between inside and outside.
12. Where air conditioning is required, it is preferred that condenser units not be located on balconies. Where these units are located on balconies they should:
 - be well integrated with the design of the building,
 - be located away from openings into habitable rooms in a well ventilated location
 - be suitably screened
 - not be included in the area calculation of the balcony .
13. For architectural reasons it may be desirable to include the

4.0 General Controls and Guidelines

balcony area as part of the main living room. The following controls apply:

- ensure the apartment size is increased – refer to *Table 4.9 Minimum Residential Apartment Sizes*
- provide a balustrade that allows the open doors to create a minimum aperture of 2.4 m wide and 2.1 m high
- provide an eave, awning or weather protection sufficiently wide to shelter the aperture and enable it to remain open during rain.

Visual Privacy

14. Design building layouts to minimise direct overlooking from apartments to other rooms and private open spaces.
15. Incorporate screening devices to retain views and privacy from rooms and outdoor spaces.
16. Stagger doors, windows and primary balconies to block direct views between apartments

Solar Access

16. To achieve high quality living environments:
 - provide a minimum of three hours of direct sunlight per day to living rooms and private open spaces in at least 75 per cent of dwellings within a residential development on 30 June.

Daylight Access

18. All residential apartments must have daylight access to habitable rooms.
19. Limit the depth of single aspect apartments to maximum 10 m.
20. Limit the number of south facing apartments and provide generous windows.

Mail Boxes

21. Provide lockable mail boxes close to the street and building entrances.
22. Integrate mail boxes with front fences, building entrances and lobbies.

Storage and Clothes Drying Facilities – Residential Buildings

23. In addition to kitchen cupboards and bedroom wardrobes, provide accessible storage facilities at the following rates:
 - studio apartments – 4m²
 - one bedroom apartments – 6m²
 - two bedroom apartments – 8m²
 - three plus bedroom apartments – 10m².

These areas are in addition to the minimum apartment sizes specified in *Table 4.9 Minimum Residential Apartment Sizes*.

24. Storage areas located within apartments are preferred.



Source: Jan Gehl and Lars Gemzoe 2001

In between spaces such as verandahs and colonnades in courtyards promote community and allow for play and outdoor living in all weather.



Source: Ray Bevan 2005

Security doors at the building line improve safety and appearance.

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Source: Sydney Olympic Park Authority 2009



Car parking facade that is well integrated into the overall composition of the building base.

25. Ensure storage separated from apartments is secure for individual use.
26. Facilitate communal open space maintenance by providing garden maintenance storage that includes connections to water and drainage for each communal area.
27. Provide a screened outdoor clothes drying area either as a private service balcony or designated common drying areas for each dwelling.

4.6.18 Minor Alterations and Additions

Building owners may wish to make minor changes to existing buildings, including small additions, external refurbishments and landscape elements such as pergolas, sun shading and the like.

1. All proposed alterations and additions must:
 - improve the appearance of the existing building
 - be consistent with similar alterations in other parts of the building
 - improve the amenity of the existing building
 - reflect the desired character of the precinct described in *Master Plan 2030 (2018 Review)*
 - be of high quality design, well composed, well scaled and well integrated into the existing building design
 - be built of high quality materials
 - be designed by a registered architect or landscape architect
 - not adversely impact on the solar access, privacy or views of the surrounding buildings or the buildings that are allowable under *Master Plan 2030 (2018 Review)*.
2. Where the alterations are for an existing iconic structure, as shown in *Figure 3.1 Existing Heritage and Olympic Legacy*, the proposal should have the endorsement of the original architect.

4.7 Access and Parking

To implement the Access and Transport Planning Principle (see Section 3.1.6) and design safe driveways that minimise disruption to the streetscape:

4.7.1 Controls

Vehicular Access and Servicing

1. All parking is to be underground.
2. Where above ground parking cannot be avoided due to site conditions (i.e. remediated lands including site 9 and 12), it must be sleeved with active habitable uses along all streets for at least a 6m depth and for at least two levels; ground and first floor and

Source: Adam Haddow 2006



Discreet car parking entry that is well concealed from the street, optimising on the site's topographical features.

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wrap around street corners for at least 15m.

It cannot extend above the podium levels of the building.

Above ground carparking must have a well-designed elevation along streets that are:

- fully enclosed up to at least level 4,
- designed to integrate well with the building elevations and appear as a solid façade.

3. Design of underground car parking in Boundary Creek, Parkview and Southern Sports Precincts must meet the following requirements:
 - The design of the underground car parks must preclude the need for permanent dewatering. Groundwater is not to be pumped or extracted for any purpose other than temporary construction dewatering
 - The design of a structure that may be impacted by any watertable must require a waterproof retention system (i.e. a fully tanked structure) with adequate provision for future fluctuations of watertable levels. (It is recommended that a minimum allowance for a watertable variation of at least +/-1.0m beyond any expected fluctuation be provided.) The actual watertable fluctuation and fluctuation safety margin must be determined by a suitably qualified professional.
4. Garages and parking structures are not permitted forward of the building line and must be screened from the public domain by active uses.
5. Design vehicle access points and paths are to satisfy:
 - AS/NZS 2890.1 – 2004: Parking Facilities – Off Street Car Parking, AS 2890.5 – 1993: Parking Facilities – On Street Parking and AS/NZS 2890.6:2009, Parking facilities – Off-street parking for people with disabilities
 - AS 1428.1 – 2009: Design for Access and Mobility – General requirements for access, New building work
 - AS 1428.2 – 1992: Design for Access and Mobility – Enhanced and additional requirements – Buildings and Facilities
 - AS/NZS 1428.4.1 – 2009: Design for Access and Mobility
 - Means to assist the orientation of people with vision impairment
 - Tactile ground surface indicators
6. Locate vehicle access points as indicated on the relevant precinct control drawing.
7. For safety and public domain amenity, vehicle access points are to be:
 - physically separate and clearly distinguished from

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- pedestrian entrances and access ways
 - located within secondary streets and laneways where possible
 - designed and built with clear sight lines for drivers and pedestrians at pedestrian and vehicular crossings.
8. To minimise visual intrusion and optimise active street frontages, vehicle driveways are to be as narrow as possible and have a garage door at the building line.
 9. Minimise the width of driveways and blank walls to the public domain by consolidating car access, docks, servicing and waste disposal.
 10. Servicing of retail and commercial developments is not permitted from streets required for servicing major events.

Vehicle Parking

11. Provide car parking for non-residential developments at the rates in *Table 4.10 Maximum Vehicle Parking Rates – Non-Residential Uses* below:

Table 4.10 Maximum Vehicle Parking Rates – Non-Residential Uses

Land Use	Type	Rate
Commercial	All	1 space/80 m ²
Retail	Supermarkets	4 spaces/100 m ²
	Local Retail	1 space/50 m ²
	Themed Retail	1 space/50 m ²
Hotels Serviced Apartments and Boarding Houses	Accommodation Staff	1 space per room 1 space/2 staff
Hospital	Visitors Staff	1 space/4 beds 1 space/2 staff
Place of Worship	Visitors	1 space/25 m ²
Club	Visitors	1 space/50 m ²
	Staff	1 space/2 staff
Restaurant		1 space/50 m ²
Professional Consulting Rooms	Visitors	1 space/professional
	Staff	1 space/2 staff
Recreational Facility (Sports Participation)	Visitors	3 spaces/100 m ² GFA 1 space/2 staff
Education	Schools	1 space/2 staff
	Tertiary	1 space/2 staff
Childcare	Visitors/Set Down	1 spaces/4 children and suitable drop-off
	Staff	1 space/2 staff

12. Provide car parking for residential developments at the maximum rates in *Table 4.11 Maximum Vehicle Parking Rates – Residential Uses* opposite:

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13. Provide accessible parking at the rate prescribed in SOPA Access Guidelines

Table 4.11 Maximum Vehicle Parking Rates – Residential Uses

Land Use	Type	Rate
Residential General	1 bedroom	1 space/dwelling
	2 bedroom	1.2 spaces/dwelling
	3 bedroom	1.5 spaces /dwelling
	4 bedroom	2 spaces /dwelling
	Visitors	0.25 spaces/dwelling
Aged Housing	Occupant	2 spaces/3 dwellings
	Visitors	1 space/5 dwellings

13. A review of car parking rates outlined in *Table 4.10* and *4.11* will accompany any significant future public transport improvements and/or reviews of *Master Plan 2030*.
14. Car sharing is strongly encouraged. The Sydney Olympic Park Authority will work closely with proponents and local councils to identify opportunities to provide car sharing spaces for new developments where possible.

Bicycle Access and Servicing

15. Bike parking facilities are to comply with AS 2890.3 – 2015 Parking Facilities – Bicycle Parking.
16. Build bicycle lanes as shown in the street sections and plans.
17. Provide change rooms, showers and lockers for people walking, running or cycling to work on all employment generating development. Locate facilities close to bike parking facilities to encourage sustainable transport options.
18. Locate basement Bike parking as close to ground level car park entries as possible.
19. Provide secure, conveniently located bike parking facilities at the minimum specified in *Table 4.12 Minimum Bicycle Parking Rates* below:

Table 4.12 Minimum Bicycle Parking Rates

	Permanent Spaces Required	Visitor Bicycle Storage
Commercial	1 space per 150 m ² GFA	1 space per 75 m ² GFA
Residential	At the same rate as car parking spaces outlined in <i>Table 4.11</i> above	
Educational	1 staff space/100 full time students	N/A
	1 student space/10 full time students	

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Source: Christian Schittich 2004



Private open space requires privacy from adjoining communal courtyards and is achieved by plants and landscaping.

Source: Sydney Olympic Park Authority 2007



Water features contribute quality of light, sound, temperature and ambience in courtyards and may also be used for stormwater retention and rainwater recycling.

4.8 Transport Strategies and Infrastructure

The infrastructure included in the Sydney Olympic Park Local Infrastructure Contribution Framework 'ICF 2030' has been generally designed to cater for development envisaged under *Master Plan 2030 (2018 Review)*. However, the range of transport strategies and infrastructure included in ICF 2030 may not meet all of the demands generated by proposed development without significant improvements to transport infrastructure.

Commercial development will generate most of the travel demand in the peak commuter periods, and so the extent of this development will largely dictate Sydney Olympic Park's future impact on the performance of the surrounding road network. *Master Plan 2030 (2018 Review)* identifies a maximum commercial development in Sydney Olympic Park of over 410,000 m² of GFA. Full utilisation of this commercial development potential cannot be supported by the current levels of public transport use and the current road network. The anticipated transport demands of the total commercial development potential afforded by *Master Plan 2030 (2018 Review)* can be met by initiatives included in this plan, namely:

- implementing travel demand strategies
- providing new transport enhancements, including:
 - regional road intersection upgrades
 - local road intersection upgrades
 - Parramatta to Strathfield Strategic Bus Corridor
 - additional strategic bus corridor services (e.g. North/South)
 - new Parramatta Light Rail
 - provide for future Metro stop
 - relevant state road enhancements (e.g. WestConnex)
- increasing the trip mode share to public transport during peak commuter periods to 40 per cent
- targeting a specific bicycle/pedestrian mode share split of 8 percent.

The Sydney Olympic Park Authority will track new development and associated transport demand generation within the precinct and endeavour to match this to the capacity within the existing and planned transport networks. However, given the preliminary nature of the above infrastructure proposals, it is premature to address the costs of these initiatives in *Master Plan 2030 (2018 Review)* for the following reasons:

- only the broad need for the infrastructure has been identified. More precise specification and cost of infrastructure alternatives will emerge over time only as travel behaviour associated with Sydney Olympic Park development becomes more established
- the evolving transport planning and funding framework. That is, it is possible that public private partnerships may be deployed to provide major new transport capacity in Sydney Olympic Park.

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4.8.1 Controls

1. All non-residential developments in the Town Centre are required to prepare and implement a Work Place Travel Plan outlining how the development will comply with *Master Plan 2030 (2018 Review)* transport strategies and relevant mode share target for utilisation of public transport and minimisation of car travel during peak commuter periods.
2. The Work Place Travel Plans are to comply with Sydney Olympic Park Authority's Travel Plan Guidelines. These guidelines require that a Work Place Travel Plan form part of a development application. Part of any consent will include the implementation of a Detailed Travel Plan as part of the operation of any approval at Sydney Olympic Park. The Travel Plan is also subject to annual review.



Source: Christian Schittich 2004

Planted walls provide vertical green areas with associated ambience and natural attributes in constrained courtyards.

4.9 Landscape and Site

To implement the Landscape Planning Principle (see Section 3.6), improve urban air quality and imbue new developments with open space, privacy, attractive views, green leafy microclimates, good solar performance and improved stormwater management:

4.9.1 Controls

1. Retain existing ground levels, significant mature trees identified in the Sydney Olympic Park 2030 Significant Tree Register and other significant site features where indicated on precinct control drawings.
2. Where significant mature trees must be moved to accommodate new street design levels or development, they are to be transplanted and incorporated into new courtyards or landscaped areas within the site.

Open Space

To provide sufficient open space and ensure open space is functional and attractive:

3. design open space to create a high quality address and setting for buildings, and to complement the adjacent public domain.
4. provide setbacks as required in the Buiding Zone and Setbacks Plan for the relevant precinct.
5. a minimum of 50 per cent of the front setback area is to be planted.

Residential Open Space

6. A minimum of 30 per cent of the site area is to be open space, ground level private open space and/or ground level communal open space and/or setbacks.

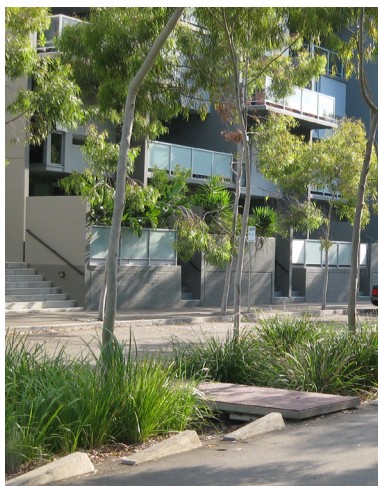


Source: Frank Stanisic 2004

Well lit common stairwells, landscaping and direct pathways increase safety within common areas.

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Source: Sydney Olympic Park Authority 2007



Bio-remediation swales located underneath the street medians filter and redirect the stormwater back into the system for irrigation and various other uses.

7. Provide communal open space to all residential apartment buildings at a minimum size of 60m² with a minimum dimension of 6m.
8. Ensure a minimum of 50 per cent of the communal open space area is unpaved and planted.
9. Ensure communal open space is designed to provide:
 - a balance of sunshine and shade
 - accessible and safe routes through the area between buildings
 - privacy for dwellings and their associated outdoor spaces addressing the larger communal space
 - accessible and screened service areas.
 - amenities and facilities e.g. BBQs
 - opportunities for diverse range of uses such as community gardens and outdoor play.
10. Provide private open space area to all apartments to comply with *Table 4.13 Minimum Open Space Provision – Residential Uses* below:

Table 4.13 Minimum Open Space Provision – Residential Uses

	Minimum Open Space Size
Studio and 1 Bedroom Apartment	9m ²
2 Bedroom Apartment	12m ²
3 Bedroom Apartment	15m ²

Larger private open space areas are encouraged, especially at gardens on the ground floor.

Safety and Security

To encourage safe and vital communal spaces and courtyards that allow natural surveillance and reduce opportunities for crime:

11. Carry out a formal risk assessment in accordance with NSW Police Safer by Design (CPTED) protocols for all residential developments of more than 20 new dwellings. Crime risk assessment is to extend beyond the site boundaries to include the relationship of the building to public space areas.
12. To reinforce territory, ensure site boundaries and private and communal space boundaries are clearly defined and secure.
13. Ensure common internal areas, such as lobbies and foyers, hallways, recreation areas and car parks, are overlooked to provide passive surveillance.
14. Provide direct, well lit access between car parks and dwellings, car parks and lift lobbies, and to all apartment entrances.
15. Ensure all communal and public site areas have clear sight lines and minimise opportunities for concealment.

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Deep Soil

To ensure there is sufficient deep soil on each site and throughout the Town Centre to retain stormwater, manage the water table and water quality, and support the growth of medium and large trees:

16. A minimum of 20 per cent of the site's open space area is to be deep soil.
17. Areas included as deep soil are to have a minimum dimension of 2m.
18. Consolidate areas of deep soil within sites and between adjacent sites to increase the benefits.
19. Basement car parks are to be predominantly within the building footprint.
20. A minimum of one large tree with a mature minimum height of 12m in deep soil is to be planted per 60m² of courtyard space.

Stormwater Management for Open Space

To minimise the impact of stormwater from communal open space on the health and amenity of nearby waterways:

21. Retain stormwater on site by:
 - collecting and storing water from roofs and hard surfaces
 - maximising porous surfaces and deep soil
 - draining paved surfaces to adjacent vegetation.
22. Protect stormwater quality by providing for:
 - sediment filters, traps or basins for hard surfaces
 - treatment of stormwater collected in sediment traps on soils containing dispersive clays.

Note: All developments must refer to Sydney Olympic Park Authority's Stormwater and Water Sensitive Urban Design Policy in relation to the requirements for Deep Soil and Stormwater Management.

Planting

23. Prioritise drought tolerant plant species that enhance habitat and ecology.
24. Create optimum growing conditions by:
 - specifying appropriate soil conditions, drainage and irrigation
 - designing planters to support the appropriate soil depth and plant selection and to accommodate the largest volume of soil possible to a maximum depth of 1.5m
 - providing minimum soil dimensions in *Table 4.14 Minimum Soil Depth Provisions* below:

Table 4.14 Minimum Soil Depth Provisions

	Minimum Soil Volume	Minimum Soil Depth	Minimum Soil Area



Source: James Weirick 2004

Integrated water management system that also provides the surrounding developments with a high quality urban space.

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Large Trees Diameter up to 16m	150m ³	1.3m	10m x 10m
Medium Trees Diameter up to 8m	35m ³	1m	10m x 10m
Small Trees Diameter up to 4m	9m ³	800 mm	3.5m x 3.5m
Shrubs		500 – 600 mm	
Ground Cover		300 – 450 mm	

Fences and Walls

25. Unless otherwise stated in the Precinct Controls, the maximum height for a front fence is 1.2m from the finished footpath level of the adjoining street.
26. Design fences to be durable, easily cleaned and graffiti resistant.
27. Do not create long, blank fences.
28. Design fences to highlight building entrances and allow for outlook and casual street surveillance.
29. Design fences to be integrated with the building and landscape design through the use of common materials and detailing, and to be part of a suite of fences in the street.
30. Innovative landscaped and planted solutions are encouraged for sustainability and to create a pleasant, shady ambience.

4.10 Community Facilities

To implement the Community Facilities Strategy for Master Plan 2030 (2018 Review) and ensure suitable community facilities are available at required times to support the growing community:

4.10.1 Controls

1. Implement the community facilities as shown in *Figure 4.9 Community Facilities Plan* and *Table 4.15 Community Facilities and Services Phasing* below:

Table 4.15 Community Facilities and Services Phasing





Proposed Community Infrastructure	Implementation Phase
Combined branch Library and Multi Purpose Community Centre	Short to Medium Term
Child Care Centres	All Phases
Local Open Space	Medium to Long Term
Active Open Space	All Phases
Public Transport Programs	All Phases

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Figure 4.9 Community Facilities Plan



Key

-  Parks
-  Community Facilities (Possible Locations)
-  School (Possible Locations)
-  Childcare Centres (Possible Locations)

